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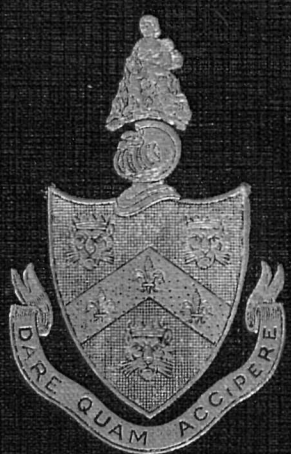

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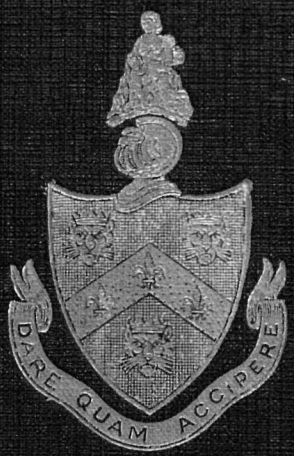

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GUY'S HOSPITAL GAZETTE

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PASSIM

THE New Year has begun, and it is interesting to follow the example set by our daily newspapers by reviewing the events of the past twelve months and by looking into the future to see what it holds for us.

During 1934 there was an exceptional number of changes in the Staff. Mr. Turner retired from the Surgical Staff early in the year and Mr. Eason retired from the Ophthalmic Staff more recently. The gaps which they left were filled by Mr. Eckhoff and Mr. Law respectively. Towards the latter end of the summer the Hospital suffered a severe loss in the death of Mr. Trethowan while on holiday in Scandinavia. In October, Professor Eyre retired from his position as head of the Bacteriology Department. He had been at Guy's for so many years that he had been regarded almost as a permanent fixture, so that his loss will be felt exceedingly. From the Medical side Dr. Witts has left us to begin his work as Professor of Medicine at St. Bartholomew's Only in our last issue we expressed our good wishes to Dr. Boland, who is filling his place. At the beginning of the school year the Medical Research Council instituted the Clinical Research Unit, and Dr. Grant assumed the position of Director. He was also made an Assistant Physician to the Hospital. During the summer, Professor Pembrey, who had only recently retired, passed away, much to everybody's regret.

Leaving now the changes in the Staff, perhaps the most notable event of the year was the laying of the foundation stone of Nuffield House by Lord Nuffield. This building is now taking form, and its skeleton is almost complete, so that we can obtain a conception of its size and shape. We feel sure that when it is opened before the end of this year it will not only be a boon to the Staff, but will also bring Guy's into line with some of the other teaching hospitals in its accommodaiton for private patients.

This brings us to the prospects for 1935. It is impossible for us to enter into any details here, but the fact that last year the income of the Hospital exceeded the expenditure is a good omen for the future. There are many improvements which we could suggest for increasing the efficiency of the Hospital service—many of them improvements which will have to be made if we are to keep abreast of modern ideas and maintain our position in the estimation of the general public. Unfortunately, they all require expenditure, but an effort has been made, in the running of a Ball in the West End, to bring our needs to the notice of the ever-generous public, and we hope that the future will see these improvements carried out.

There is no doubt that, as a teaching hospital, the recent closer link between St. Bartholomew's, St. Thomas's and ourselves is a progressive step, and we feel that everything should be done to make this link a stronger one. The proposal to hold a combined M.R.C.P. course in the three hospitals will help this. We cannot allow this opportunity, while on the subject of teaching, to pass without repeating our misgivings about the advisability of changing the old system, where there was one registrar attached to each surgical firm, for the present one.

▭

WE regret to hear of the recent death of Miss Eleanor Davies-Colley, M.D., F.R.C.S., who was so closely connected by family ties to the Hospital.

She was the daughter of one of the best known of Guy's surgeons, and a sister of Mr. R. Davies-Colley, surgeon to the Hospital. Her mother was a daughter of Mr. T. Turner, Treasurer to the Hospital. Miss Davies-Colley was the first woman member of the profession admitted to the Fellowship of the Royal College of Surgeons and was senior surgeon to the South London Hospital for Women. In her death the profession loses one of its most distinguished women members.

CHRISTMAS at the Hospital was as enjoyable as ever. Everybody seems to agree that the "Niggers" were better than they have been for some years, and the Ward Concerts were also very much appreciated. Unfortunately, we have not been able to obtain accounts of the individual concerts, so we must take this opportunity of thanking the B.B.C. artists and the Association of Concert Artists for the wonderful work which they did in touring the wards and providing such really excellent performances for the benefit of the patients and nurses. There were many other voluntary artists whom we would also like to thank.

A LETTER has been sent us from the secretary of the Ball Committee containing the details of the arrangements for the Residents' Ball. This is always an absolutely first-rate show, which everybody enjoys. It is always difficult to get those in the Medical School to go, but we hope that this year they, too, will swell the number of guests and so make the gathering one that is truly representative of members of the Hospital.

THERE is also another letter which raises a serious question. How best can the loss of property from the coat-racks in the College be checked? The instance quoted is by no means an isolated example. Recently the wall of the passage-way outside the porters' room has been studded with notices advertising the loss of coats. There is no doubt that to leave a coat on the racks provided by the Clubs' Union is to run a very definite risk of not seeing it again. This is largely due to the easy access which anybody, whether a member of the Hospital or not, can have to the racks. A suggestion, which is not new, is made that a cloak-room should be provided with a porter in attendance.

Rooms 48 and 52 on the ground floor look out on Sparrocks Row, and are the most unhealthy rooms in the College. While unsuitable for the purpose for which they are now let, they would, if combined, make a very adequate cloak-room. Their rent would then have to be paid by the Clubs' Union.

The obvious objection is that of expense. Extension, however, of the existing facilities—an inadequate number of lockers in a subterranean recess—would be ineffective in dealing with this problem. The Clubs' Union are responsible for the interests of its members, and the present arrangements are too unsatisfactory to be allowed to continue.

Sherlock Holmes and Dr. Watson

By Maurice Campbell

II.—THEIR CHEMISTRY, ANATOMY, AND PHARMACOLOGY

In the times when Holmes and Watson were students, physiology had not yet come into its own, and it is to chemistry and anatomy that we must turn for their knowledge of the preliminary sciences. The chemical researches of Holmes and his work at the chemical bench are well known. When he first met Watson he had just perfected a test for hæmoglobin which was to replace the old guaiac test (The Study in Scarlet), and even in his student days had spent seven weeks in his long vacation working out a few experiments in organic chemistry (The Gloria Scott). Later, during his absence from London, after the encounter with Moriarty, he conducted a research into the coal-tar derivatives at Montpelier (The Empty House) and scattered through the stories are shorter references to the work he carried on from day to day, such as the analysis of the acetones, at which he put in an all-night sitting during the adventure of the Copper Beeches.

Watson was fond of any reference to chemical work, and described Sholto's room, which had been fitted up as a laboratory—the double line of glass-stoppered bottles on the wall, the table littered over with Bunsen burners, test-tubes, and retorts (The Sign of Four). In the early days he had described Holmes as a first-class chemist (The Study in Scarlet), and he must certainly have kept up his interest to carry on these investigations.

ANATOMY

But from the medical aspect we are more interested in Holmes's knowledge of anatomy. He was well up in this according to Stamford, and Watson tells us that his knowledge was accurate but unsystematic; if Miss Dorothy Sayers is correct in deducing that Holmes read the Natural Science Tripos and chose Comparative Anatomy as one of his subjects (Baker Street Studies), this might be expected, for Watson, like most doctors, would think that anatomy meant human anatomy. Holmes had not learnt anatomy as thoroughly as most medical students have to—indeed, Stamford states that he had not taken out any systematic medical classes—and it was Watson who identified the upper condyle of a human femur (Shoscombe Old Place), though it was Holmes who detected that the ears had been preserved in salt and not in carbolic or spirit, as would have been the case had the parcel been the ghastly prank of a medical student from the dissecting room (The Cardboard Box).

But there were several more general anatomical points which Holmes had studied deeply and referred to frequently—especially with regard to the head, the hands and the feet. He deduced the intellectual capacity of Mr. Baker from the size of his bowler (The Blue Carbuncle), and though this has been criticised because of the many exceptions, he was quite correct in the general rule, which has been used as late as this year in a research on the mental capacity of African negroes. Indeed, it is unlikely that Holmes would make such a mistake, for he was able to discuss skulls with the expert anthropologist Dr. Mortimer (The Hound of the Baskervilles), and had also written two monographs on the human ear in the *Anthropological Journal* of 1887.

The deduction of a client's occupation from its effects on the hands is frequently noted (the manual labour of Jabez Wilson, the typewriting of Mary Sutherland, the music of Violet Smith). Some time before 1888 Holmes had written a work on the influence of a trade upon the form of the hand, with lithographs of the hands of slaters, sailors, cork-cutters, compositors, weavers, and diamond-polishers. The same idea was developed in a rather different way in a series of papers by Lane (now Sir Arbuthnot), which dealt with the skeletal changes produced by different occupations such as the shoemaker, the coal-trimmer, and the washerwoman, and were published between 1886 and 1888.* It would be interesting to know if Holmes had read Lane's papers, or vice versa, or if this was another example of the simultaneous publication of new discoveries by independent routes as in the famous case when Darwin and Wallace published their theory of Evolution almost at the same time; in one paper even the title is almost the same.[1]

As I have been unable to trace Holmes's paper, the following extracts from Lane's show the trend of thought: "The body—the changes in whose anatomy form the subject of this paper—was sent to the hospital for dissection. I was therefore enabled to observe accurately every structural variation that had resulted from the habitual performance of a definite series of movements, entailing the expenditure of a considerable amount of muscular exercise during the greater part of a long life-time of 73 years. Having concluded from a careful examination of the changes which the body presented that the man had been a shoemaker, I wrote to the infirmary in which he had died and was kindly informed that he was entered in their books as a shoemaker."[2]

"Let us now examine into the manner in which a vigorous labourer who carries a heavy load habitually transmits that weight through his feet. . . . he has a well-formed inner arch to his foot. You will observe that the epidermis is thicker beneath the outer part of the heel than the inner, that it is also very thick along the outer margin of the sole, along the whole under surface of the pad and beneath the ball of the great toe." [3]

"What I wish to call attention to here is that the occupation of washing clothes is responsible for the production of very definite pressure changes in the joints of the hand and wrist." [4]

"The skin covering the patella and the upper portion of the tibia in front was dense and thick, as so commonly seen in charwomen or in those who do much scrubbing in the kneeling position."[4]

"The changes in the right thumb were very similar to those in the left, the differences which were present being dependent upon the fact that the awl was held in the right hand and the string alone in the left."[2]

The words of Lane and the spirit of Holmes. It may not be generally realised that occupation has an equally or more striking effect on the bones of the skeleton, but I have given quotations dealing more with the external results because these are open to easy verification. It may be

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2. The Anatomy and Physiology of the Shoemaker. *Journal of Anatomy and Physiology*, xxii, 593, 1887-88.
3. Deformities which Develop during Young Life. *Guy's Hospital Reports*, xliv, 241, 1886-87.
4. Some Changes in the form of the Spinal Column and Joints of the Hand; illustrated by the Anatomy of the Charwoman. *Guy's Hosiptal Reports*, xliv, 359, 1886-87.

objected that Holmes could hardly have written such classics before he was thirty, but Lane was not thirty when he wrote these papers, and many men do their most original work at an early age, and in the rest of their lives apply these observations to practical affairs.

Holmes was particularly interested in footprints, and made many deductions from them, and was familiar with plaster of Paris for obtaining casts of them. He made a good deal of use of the relationship between the length of the stride and the height (Sign of Four, Study in Scarlet, and Boscombe Valley Mystery); he does not give us the formula on which he worked, but it was probably:—

Height (in inches)=2.09 Length of stride (in inches).

The picture of Holmes on the scent of footprints and the amount he was able to deduce are among the most attractive we possess, and outstanding among these is the Adventure of the Priory School with the bicycle tracks and the horses shod with special shoes to simulate the hooves of cows.

HEREDITY

Though physiology is less well represented than anatomy, there is frequent reference to one branch of general biology.

To the student of human nature heredity is one of the most attractive of all biological sciences, though its immense importance is only slowly being realised. Examples of the inheritance of mental and physical qualities were recorded in many of these adventures as they came under notice, and most likely Holmes was responsible and must be regarded almost as a pioneer.

It was Holmes who remarked that he and his brother Mycroft had inherited their powers of observation and deduction from their grandmother's brother, the French artist (The Greek Interpreter), and on another occasion noted the similarity of the ears of Miss Sarah Cushing and of her murdered sister Mary; he had written on the subject in the *Anthropological Journal* of 1887 (The Cardboard Box). I have not been able to trace this paper in the Journal of the Anthropological Institute for the years 1886-88, and the reference is probably to a lecture on the inheritance of ancestral peculiarities and the hereditary transmission of disease which was delivered at that Institute on November 19th, 1887, at 4.30 p.m. In view of the remarks of Holmes on the relationship of intelligence and the size of the skull, it is worth noting that the same journal contains papers on the skull and the volume of the cranial contents by Rolleston (now Sir Humphrey), and on the localisation of the functions of the brain by Ferrier and Victor Horsley—papers which must have been of great interest to Holmes and Watson.

Holmes was aware of the erratic inheritance of negro characteristics, for though Mrs. Grant Munroe was English and her husband had only shown a trace of his African descent, their child was a coal-black negress.

Similar characters in the writing of father and son were noted in the Cunninghams (The Reigate Squires), and the son's cruelty to animals led to a correct deduction of the father's cruel nature, though it was well hidden (The Copper Beeches). Holmes was specially interested in the inheritance of mental qualities, and, when discussing Colonel Sebastian Moran, he puts forward a theory of his own extending to the mind the embryological theory of recapitulation, viz., that the individual represents in his development the whole procession of his ancestors, and that such a sudden turn to good or evil stands for some strong influence which came into the line of his pedigree. The person becomes, as it were, the epitome of the history of his own family. The theory is somewhat fanciful, but some of the examples that came under his notice seemed to support it.

The wild, fierce strain that was present in the first Hugo Baskerville and gave rise to the family legend of the hound, came out again in the fiery temper of Sir Henry Baskerville, in his uncle Rodger, the black sheep of the family who was forced to fly to Central America, and in the villainous Stapleton, who was really Rodger's son. Both Rodger and Stapleton had also a striking physical resemblance of the old Hugo, and this was one of the clues that led Holmes to suspect Stapleton, by guessing he was a member of the family with designs on the succession. Dr. Mortimer, too, was interested in the subject, and has published a paper in the *Lancet* of 1882 on " Some Freaks of Atavism " (The Hound of the Baskervilles).

We read of another family where violence of temper approaching mania was hereditary in the males (sex-limited inheritance), and where the family estate had been squandered because four successive heirs were wasteful and dissolute (The Speckled Band). Mr. Roberts (*loc. cit.*) suggests rather unkindly that the Watson family, with their propensity for gambling, provided another example.

PHARMACOLOGY

There are so many references to this subject that only some of them can be included. Watson makes frequent mention of many of the common drugs, especially perhaps opium and cocaine, and displayed a considerable knowledge of their use,

though some of the more out-of-the-way facts may have been learnt from Holmes, who was well up in belladonna, opium, and poisons generally (Study in Scarlet).

Watson describes the yellow pasty face, drooping lids, and pin-point pupils of Isa Whitney sitting all muddled in a chair, the wreck and ruin of a noble man; after reading De Quincey's work he had started to drench his tobacco with laudanum and had become an addict to opium and an object of mingled horror and pity to his friends and relatives. It was while rescuing him from the Wapping opium den so graphically described by Watson that he met Holmes and was embarked on the Adventure of the Man with the Twisted Lip.

When powdered opium was used by John Straker to drug his stable boy so that he could get into the stable at night to maim " Silver Blaze," Holmes correctly deduced that the opium must have been given by someone who had also arranged for the lad to have curry for supper, as this was just the dish to disguise its taste. When it was used by ex-President Don Murillo to drug his governess, whom he wished to carry off with him, Watson noticed her head hanging listlessly on her breast, and recognised that she had been drugged with opium as the pupils were dark dots in the centre of the broad grey iris (Wisteria Lodge).

We do not hear of opium being used medicinally, but paregoric was recommended for asthma and bronchitis, and Watson was able to inject morphia when Baron Gruner had vitriol thrown at him and when Professor Presbury was severely bitten by his dog (The Illustrious Client and The Creeping Man), but unfortunately he was not present to give it when it was begged for in The Lion's Mane. It is interesting as showing the increasing fashion for injections that all these episodes occurred relatively late—in 1902, 1903, and 1907, while the references to opium were earlier.

When Holmes made use of belladonna to help in simulating a dangerous attack of fever, Watson described how his eyes had the brightness of fever with a hectic flush on either cheek, but it was due to starvation and belladonna and rouge; Watson's mistake was only pardonable because he was given no chance of coming near and detecting that there was no rise of temperature or pulse rate (The Dying Detective). The use of belladonna for its effect on the eyes has sometimes its devotees even in hospital circles.

Holmes's use of cocaine is too well known to elaborate. At first it was only occasional, but by 1888 (The Sign of Four) it had become a regular habit. Watson no doubt realised the immediate danger as well as the risk of addiction when he read an article in the *British Medical Journal* of October 30th, 1886, describing a case where the injection of 12 minims of a 10 per cent. solution under the skin had been followed in three minutes by a syncopal attack with twitching of the face and a cold clammy perspiration—in fact, all the appearances of impending death. We are not told how much cocaine Holmes used, but when Watson was led to remonstrate about its use he was injecting a 7 per cent. solution three times a day; even 5 minims of this would be above the minimum, and 10 minims of this would be above the maximum dose recommended in the British Pharmacopæia.

In the following year, perhaps because of Watson's remonstrances, he was only using it from time to time (The Scandal in Bohemia and The Man with the Twisted Lip). After that we hear no more of it till 1897, and even this is an uncertain reference, for we read that Holmes's iron constitution had given way in the face of constant hard work of a most exacting kind, aggravated, perhaps, by occasional indiscretions of his own. One cannot help admiring the ability of Dr. Moore Agar, of Harley Street, who was able to prevail on Holmes to take a complete rest.

To the modern readers who know the horror with which cocaine addicts are regarded, it must seem strange that Holmes should ever have indulged, but the explanation lies, I think, in the following facts about its history: Though the use of cocaine had been known in Mexico since the 12th century and extended by Pizarro's conquest of Peru in 1542 and brought to Europe in 1750, it did not become well known in medical circles till its use by the Viennese oculist Köller in 1884, so that when Holmes began to use it there had hardly been time to realise its disastrous after-effects in Europeans; and he hoped, no doubt, to find it of great advantage in stimulating his brain and helping him to endure fatigue as the Indians of the Andes had for so many centuries. His ability to give it up when he realised its dangers after he had acquired the habit firmly shows the stuff of which Holmes was made.

Although the hypodermic syringe had been introduced into medicine a generation before by the French surgeon Pravaz, it seems to have become increasingly popular about this time, and we read in the *Lancet* of 1887 that " the growing practice of giving and taking hypodermic injections needs to be stopped. The instrument makers could tell a startling tale of the number of hypodermic syringes sold to the public in a year." We can only hope that the publicity Watson gave to the method did no further harm.

There are many references to vegetable alkaloids of the convulsive group—indeed, it seems to have been a favourite subject of Watson. Gelsemium, from the root of the yellow jasmine, is one of these poisons which produce convulsions, and it seems probable that he was familiar with a paper by A. C. Doyle on the action of gelseminium sempervirens in the *British Medical Journal* of 1879, and therefore specially interested in the cases where similar poisons were used.

The recommendation of strychnine in large doses as a sedative is sometimes quoted as evidence of Watson's ignorance, but this is a mistake; for the episode is to illustrate the confusion into which he had been thrown by falling in love with Miss Morstan: Watson could almost have been forgiven if he actually had given the injection to Thaddeus Sholto, who must have been very trying in the cab on that journey.

Later the same evening when his brother Bartholomew was shot with the poisoned dart and found with the *risus sardonicus* on his face and with his muscles in a state of extreme contraction, far exceeding the usual rigor mortis, Watson rightly deduced that it was some strychnine-like substance which would produce tetanic contractions; probably it was curare, which is used by South American natives on their arrows, or some similar substance used by the Andaman islanders.

Curare is mentioned by name as the poison used by the small boy on his half-brother and sucked out by his devoted mother. Holmes suspected something of the sort even before he found the walls of the house hung with South American weapons; when he saw the dog dragging its legs with a limp he quickly realised that curare had been injected with some pointed instrument—probably one of the arrows—and that the boy had just practised on the dog and produced a partial paralysis, though the vet. had only been able to diagnose spinal meningitis. (The Sussex Vampire).

It is not so easy to know what Jefferson Hope gave to Drebber for the crucial choice of the two pills—one fatal and one harmless. The dying terrier on which it was tested gave a convulsive shiver in every limb and lay as rigid and lifeless as if it had been struck by lightning. Jefferson Hope had worked in America in a laboratory, and had taken some South American arrow poison one day when the professor had been lecturing on alkaloids, and had worked it up into a small pill. This might suggest curare again, but it is only poisonous when injected, and harmless when taken by mouth.

We are not told what poison was used by the professor's wife (The Golden Pince-Nez) before she left her hiding-place in the cupboard—possibly coniine, the alkaloid of hemlock, which was also used by Socrates, for, like him, she maintained control of her speech and faculties till the last moment. Coniine is almost without effect on the cerebrum, and causes death by respiratory paralysis.

Another poison mentioned is prussic acid, but Holmes persuaded the "Veiled Lodger" not to take it, and knew that he had been successful when she sent him her supply by post the next day.

Other useful drugs are mentioned less often than poisons, and reference has been made already to the use of quinine in the treatment of malaria. Amyl nitrite was used for catalepsy (The Resident Patient); it is better known for its value in angina pectoris, for which it was introduced in 1867 by Lauder Brunton when he was still a house-physician, but it is still recommended in some modern books as of use in prolonged epileptic attacks, so its use for catalepsy was quite reasonable.

Turning to other chemicals with pharmacological actions, chloroform is mentioned several times. It was used to overpower Mrs. Maberly when her house, the Three Gables, was broken into, and by Holmes when he was masquerading as an Irish-American spy for the German Von Bork (His Last Bow); its most interesting use was in attempting to kill Lady Frances Colefax in the coffin, "which took longer being out of the ordinary," because it was made to hold two. Watson, as always, was prompt in an emergency, and undoubtedly saved her life, his use of artificial respiration probably being more efficacious than the injection of ether which he gave.

Another occasion when Watson's prompt measures were instrumental in saving life was when they found Paul Kratides and the Greek Interpreter overcome by carbon monoxide poisoning from the fumes of charcoal. There was a dull blue flame from the charcoal brazier and a horrible poisonous exhalation which set them gasping and coughing. After opening the windows they dragged out the two victims. Both were blue-lipped and insensible, with swollen congested faces and protruding eyes. Kratides was too far gone for their aid, but Melas still lived, and in less than an hour, with the aid of ammonia and (as usual) brandy, Watson had the satisfaction of seeing him open his eyes and of knowing that he had been drawn back from that dark valley in which all paths meet. His recovery was, perhaps, rather quick considering that the exposure had killed Kratides, but the latter was already in a poor state of health, so the former would naturally stand it better.

The Retired Colourman also, made use of gas to kill his wife and her lover after he had enticed them into his strong room, and here also death would be due to carbon monoxide poisoning. It is not often used for murder, or, if it is, is not often detected; but during the last twenty or thirty years has become an increasingly common method of suicide.

As at the end of a long day, we turn expectantly to a pipe, it is pleasant to turn from these dangerous poisons to two more harmless alkaloids, caffeine and nicotine—the active principles of coffee and tobacco. Watson and Holmes were keen smokers, and their consumption must have been considerable.

"You don't mind the smell of strong tobacco I hope," said Sherlock Holmes, when sharing the Baker Street lodgings was being discussed.

"I always smoke 'ship's' myself," Watson answered.

"That's good enough," and so the famous partnership began. They would have approved of R. L. Stevenson's advice that no woman should marry a non-smoker.

Both generally smoked a pipe, though they often indulged in a cigar, especially after dinner when celebrating the successful finish of a case. Occasionally we hear of Holmes smoking a cigarette (The Scandal in Bohemia, The Final Problem, and The Boscombe Valley Tragedy); they were only then becoming really popular, though they had spread to England after the Crimean War. Watson must have been a more regular cigarette-smoker, for Holmes says that he always bought them at Bradley's in Oxford Street, and recognised him in the hut on Dartmoor by the stub with their name on, which had been thrown away outside.

Holmes probably smoked an ounce of tobacco a day; it makes one envious in these days to read of tobacco at fourpence an ounce, for he remarked that at eightpence an ounce it was a luxury since good tobacco could be bought at half the price (The Yellow Face). Holmes habitually smoked a pipe before breakfast, and, considering what it was composed of, he must have acquired considerable tolerance—his admirers will remember its composition and will forgive the foible of a great man, but others might be more squeamish, so I will only refer to the story (The Engineer's Thumb).

From the Hound of the Baskervilles we know that he sometimes bought a pound of the strongest shag all at once, which suggests a heavy smoker, and as he consumed an ounce of tobacco during one all-night sitting (The Man with a Twisted Lip) and another time three pipes in fifty minutes (The Red-Headed League), our estimate can hardly be excessive. We are less sure about Watson, but he certainly indulged in a comforting last pipe before going to bed (The Crooked Man).

Holmes was aware of the curious double action of nicotine (which has been supported by a recent American investigation into its effect on students) of stimulating the brain and nervous system under many conditions, but soothing them when they are already over-excited. Holmes generally used it for the former purpose, but Jefferson Hope illustrated the latter use when he was so excited at having Drebber safely in his cab that he feared that his aneurism might burst.

The effect of caffeine is not like this, for it is always stimulating. Watson quotes cases where this was the effect desired, as in The Naval Treaty, and cases where it was an unwanted after-effect—as in the Musgrave Ritual, when Musgrave could not sleep at night because of it and came downstairs, and found the butler in the study with his papers.

We must not forget the famous monograph of Holmes, "Upon the Distinction between the Ashes of the Various Tobaccos," in which he enumerated 140 forms of cigar, cigarettes, and pipe tobacco, with coloured plates illustrating the difference in the ash (The Sign of Four and The Boscombe Valley Mystery). Neither he nor Watson would have approved of a book which was published in New York in 1916: "The Tobacco Habit Easily Conquered; How to do it agreeably without Drugs; with an Appendix on Tobacco the Destroyer."

(To be continued)

Guy's Hospital Gazette

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The Niggers, Christmas, 1934

AT eleven the performances commenced, when, stimulated only with their own *joie de vivre*, with noses blue under the black (for the " Niggers " lived up—or down ?—to their name this year), the troupe started infusing good cheer into Evelyn.

Fowler led them, apparently already " out of luck " and lamenting his unhappy fate at being so rarely allowed to use the scalpel. Soper followed, and sang as much as he remembered of his anæsthetic trials. To the tune of " Am I wasting my time ? " we had :—

Pulseless and blue,
What shall I do ?
Turning all taps in dismay.
Sir, I implore,
Don't cut any more ;
Please wheel him smartly away.

Am I wasting my time by thinking it's fine,
Intubating the way that I do ?
He's black in the face. Oh ! What a disgrace !
Is this ether or just CO_2 ?
Are you now on the mend, or is this the end ?
It's Douglas A. Cowburn for you.

It was then, too, that we heard the O.P.O.'s, who numbered this year only three. Their first performance, like those that followed, was as much a source of animation to the rest of the " Niggers " as amusement to the audience. Led by Andrews with curious grasshopper-like movements, they lamented their peripatetic existence, alternated, or so it seems, with moments of lurid passion.

Evelyn was left to recover, and in Pat. and Sam. the A.H.S.'s, who were quite probably thirsty already, told how though for themselves they considered whisky the vital elixir, for their patients they preferred salines in all directions. To the tune of " Whisky Johnny " they sang :—

Oh, saline saves the patient's life—
Rectal saline.
Oh, saline aids the surgeon's knife—
Intravenous saline.
Oh, saline from a polished can—
Rectal saline.
Oh, saline through his kidneys ran—
Subcutaneous saline.
Oh, saline up and saline down—
Rectal saline.
If he dies he'll only drown—
Glucose, gum and saline.
Oh, saline here and saline there—
Rectal saline.
It's I'll have saline everywhere—
Hypertonic saline.

Although a great deal of it appeared to be a solo, what we heard of Campbell, Alexander and Pantin sounded very good.

When they had finished Hamilton, with moustachios a-twirl, brilliant and silvered, bewitched the audience with a song of how the commonest pathology among them was treated. To " Fare thee well " we had :—

There's a patient in the ward,
And we're going to cut him with a sword ;
And with Evipan we'll make him snore
Before he's counted twenty-four.
Fare thee well ; this pus must leave thee,
It's our duty to relieve thee ;
And remember that the best of boils must burst.
For with glycerine and arc sunlight
We'll very soon put you right.

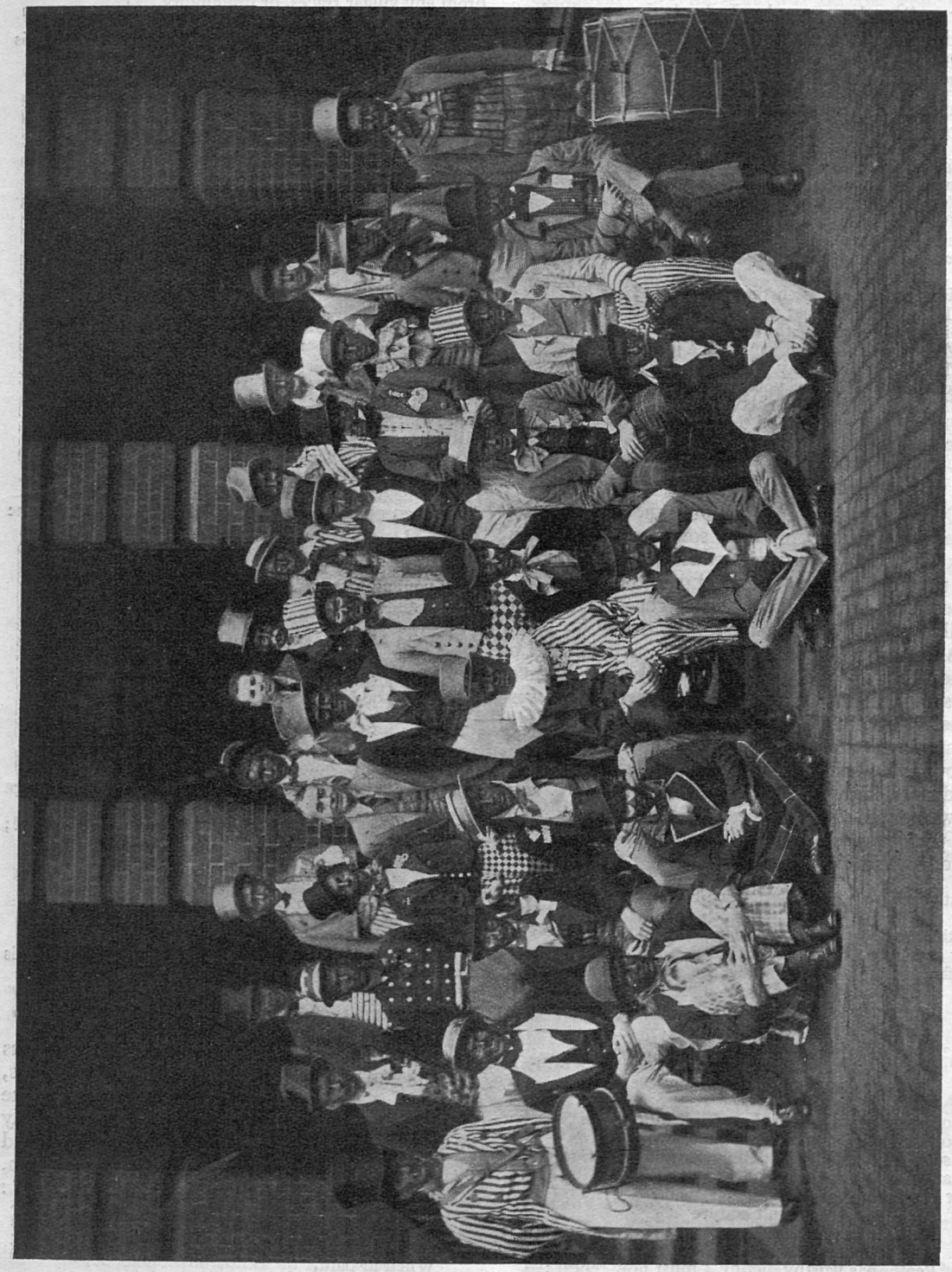
Blazeby followed, dressed in a costume in which he would have cut a pretty figure at polo in the West Indies. He was mainly concerned with obstetrical difficulties, and, indeed, sadly perplexed :—

Fœtus—what is your lie ?
Is it your head or your breech that's high ?
Will you come through, or will you stick ?
Fœtus, I'm praying you
To tell me the date that you are due.
If you have a beating heart,
Tell me when will labour start ?

Mothers, come to me.
When I've examined you carefully
You will be in ecstasy
With midwifery.
First you must get full ;
Then if you can't by yourself we'll pull,
Though I may sweat like a bull.
Soon your cot is full.
Breech, head or shoulder,
We'll get it out somehow.
Twins if you're bolder ;
Triplets or more, we don't mind a score.
With our gas machine
You'll never know what the pain has been
You'll feel like a reigning queen
When you've had fifteen.

Christopher and Naaman were next visited, and here Nicolai delighted the audience with a song which either he felt bold enough to sing, or the Censor willing to pass, and so the general atmosphere of clean fun was maintained to the tune of " The Mountains of Mourne " :—

A Mollison patient who'd just had his op.,
When he heard the result looked as though he would drop.
He thought he was placed in a Mollison bed,
But he actually had one of Rudy's instead.
Instead of his mastoid his prostate was out.
He remarked, " And my ossicles, too, without doubt.
So for all that I'm left with I might as well be
Where the Mountains of Mourne sweep down to the sea.



GUY'S HOSPITAL NIGGERS, CHRISTMAS, 1934

We were now charmed again by Fowler's voice, now well under control. Indeed, the standard of singing had risen so high in this ward that Rowlands decided to win distinction in another field. With great exuberance he " Saw stars " and admonished Matron for her maintenance of decorum :—

The Censor may be here to-day,
So we must be careful what we say ;
We must not let out parodies shock the staff.
We must try humour dry,
And only clean jokes may we ply ;
But if our tongues are fettered, please try to laugh.

Matron dear, we wish that you could hear
The stories bold that are told in your Nurses' Home.
Girls to-day are not the same as they
Were years ago when you were a junior Pro.
This killjoy ruling just leads to fooling ;
Youth will be served you must know.
The more you jaw 'em about decorum
The more giddy-minded they'll go.
So—
From to-day please wheel restraint away,
And you will see that badness will go also !

On emerging from Christopher the " Niggers' " Guardian Angel produced some alcohol. The lack of privacy, however, and perhaps for some the presence of those near and dear, prevented the fullest advantage being taken of getting the most easily obtainable stimulants of the day.

And so to Job and Luke they repaired in a condition which could only have been a source of satisfaction to Lady Astor. Here Wass was tuneful, but very " sweet and low " in " Tying himself in a knot." Here, too, MacArthur unburdened himself with great feeling, to the evident delight of the audience. Jacoby and Rowlands, in songs of unexceptionable purity, told of their experiences with the " Niggers " as parodist and performer :—

Last year I wrote some lyrics, which people thought were rude ;
So this year I have altered and made them clean and good.
My humour is no longer 'neath the umbilicus ;
In fact, I am, to me it's clear, the answer to a maiden's prayer.
I'm so pure that I'm sure
Storks bring babes from the sky.
Tales of labour pains are all " My eye."
I don't tell rude stories of men and Mae West ;
I'm the acme of perfection—I'm the purest.

I don't test for albumen, I couldn't write " En Sap."
I don't know what a purge is, or aphrodisiac.
At school I learned my spelling, pronunciation too ;
That Margot's really called " Margo " ;
But why differ with " Jean Harlow " ?
Yes, I'm pure ; don't endure
Nasty tales of a sort
Men tell after dinner over port.
Pembrey's worthy dictum I must now repeat :—
" To the pure all things are pure," so why be discreet ?
Now I have told my story, I've made it clear I'm free
From any vulgar traces, or immorality.
My future life is blameless, I'll live just like a child ;
I'll take a doll to bed at night, and my idea of dolls is bright.
Nurse of Guy's, are you wise
To the facts of this life ?
Can you face the man who'll call you " wife " ?
Do you shock your mother in your negligees ?
Well remember it's the woman who always pays.

Many generations
Of house surgeons at Guy's
Have no doubt found
That snags abound.
It may be " trying " relations
Or anæsthetic eyes ;
But worst of all, you'll say,
Is the rush one has all day.

Strangers sometimes say " Who
Is the H.S. ? What does he do ? "
I ask you, ain't that a damn silly question ?
Sisters and O.P.O.'s all
Say, " Why don't you come when we call ? "
I ask you, ain't that a damn silly question ?
Each hour of the day one is on the go,
And when one stays away everyone seems to want one so !
And when the sun's in the west,
Does one get any rest ?
I ask you, ain't that a damn silly question ?

On Monday afternoons from two pip emma
I stand and shiver.
I wait for him.
All the housemen laugh at my dilemma.
It gets me slim,
This waiting grim.

The patient's in the theatre and she is fast asleep,
But please don't let that worry you for ether's very cheap.
Oh, blow ! Bromley, why are you always late ?
The clerks are playing poker, the theatre's getting cold ;
But Doctor Scott has still a lot of stories to be told.
Oh, blow Bromley ! Why is he always late ?
I wait and wait for him all day.
I'd like to play, to go away ;
I simply have to stay and pray
That he'll come sometime to-day.
When, shortly after five o'clock, he " Rolls " up in his car,
It's far to late to operate ; the firm is in the bar.
So Go ! Bromley, why did I have to wait ?

In Lydia MacArthur became ecstatic. It was a very remarkable performance at the time, as, although the morning was well advanced, the stores in the Surgical Block maintained a strangely virginal appearance. After this, Hamilton could no longer be restrained, and with Johnson, Nicolai and Fowler, led them in " Sing, brothers " :

If you're ill,
Come along and let us try a little pill.
When in pain,
If you do not come and see us it's quite plain
You're insane.

If you're only neurotic, then lo !
We will give you Mist. Acidi Co.
But if you get the 'flu,
We've got a remedy for you ;
Here's what we'll do :
We'll cure you,
Or merely assure you
That there's nothing the matter,
And if you were fatter
You'd lose sight of your flat feet.
We can puncture you,
And that will insure you
Against having the tabes
Or dying of rabies,
Or any old spirochæte.
We'll teach you to walk
Like a Hollywood movie star.
We'll teach you to talk
By the method of St. John R——.
Yes, we can cure you.
Come on, then, you poor you !
Oh, you're thinner, you sinner.
You must eat your dinner
In Martha on Christmas Day.

This magnificent piece of sustained singing, although very alarming to the audience, fortunately did not result in apoplexy in the leader.

The Clinicals then made their first appearance, and gave us a gloomy picture of their apparently thankless and unending tasks. At least two of this band—no doubt on thoughts of the approaching lunch—did so well as to resemble the average " Nigger " about 7 p.m.

With only one more lap to go, the troupe descended on Martha, where Wass continued to delight those of us who prefer the quieter method of delivery. Again the A.H.S.'s sang, this time led by Pantin, but Hamilton could not be subdued, and soon his moustaches were again in evidence.

Doherty finished the morning by a burst of song in which, it seems, he was wondering. . . .

Fortified by lunch in the wards, the " Niggers " sallied forth again to Out-Patients, where the Children's Party was in progress. Here they sang choruses, and the children joined in with so much force that the " Niggers " were entirely outclassed.

Ruth was the next ward to be visited, and here Blumenthal, in a voice stirred with passion, sang of Gypsy Life and love among the psychotics. The O.P.O.'s followed with :—

We're just about fed up with our position ;
We never get a chance of sitting down.
We act as surgeon, midwife or physician
To all the d—— malingerers in town.
And if you think that needlessly we grouse,
We've made acquaintance with flea, bug and louse.

It's here that you get the old chronic,
The dame who comes up for a tonic.
Arthritis and burns,
Meningitis and worms,
The septic, the sweats, the pneumonic.

Whitteridge then, to a quite credulous audience, explained why the hat was on the side of his head :—

All day long I prick and tap, never have the time for tea.
Symonds is my chief, but still does he know I'm his H.P.
Then there's Barber spotting a skin and Forman, while
Grappling with the psychic side there is Gillespie.

I've got a host of tabetics who are walking on air,
Plus a little something that the others haven't got.
And their pupils are oval or square.
I've got various neurotics who rave and mutter and chat,
And if one happens to get up in the night the nurse has
to go on the mat.
I have got skins galore ; they get Eau d'Alibour ;
If they are not cured by that we go pump, pump,
pumping them with fresh drawn gore.
All these various cases let it truly be said,
They are all given at the breaking of dawn
Not their breakfast, but senna instead.

It was decided that the soporific effect of "Eyes" required combating with the appropriate drugs, so that a call in the Registrar's room preceded the entrance of the " Niggers " into Queen.

Blazeby still had obstetric difficulties—as was to be expected in such surroundings—and sang his parody to the tune of " You Nasty Man."

Wilkinson was not to be outdone, and seemed plunged from amorous to orthopædic difficulties with great misfortune :—

Once at a meeting they held in the ward,
Rudy and Lambri were heard in discord.
G. U. and Orthopæd. couldn't agree
On how to treat poor No. 3.
Said Rudy, " I'll whip out his prostate."
Said Lambri, " That treatment's a sham.
If I fix his leg in a spica by Gosh,
Now isn't that marvellous, Stamm ? "
So—
They both did their stuff with the greatest success ;
The patient was better by little or less.
His movement's not graceful, the rest you can guess,
But we all shout, " Daddy is cured ! "

Soper again had anæsthetic doubts—no doubt more anæsthetic by now—and the heroic " Niggers " managed the stairs up to Mary. Johnson sang the song of the year and had to sing it again as an encore, so vociferous was the applause.

King, wisely with notes rather than trusting to an impaired memory, dwelt feelingly on the celibacy and abstemiousness that resulted from life in the College. Tears were brought floodingly to our eyes, the lachrymation being sustained by the loss that Howell had apparently sustained on the " Isle of Capri."

Here a short interval was to have taken place, but time getting late, the " Niggers " went as straight as makes no difference to Clinical. Here the Clinicals " broke the bank at Monte Carlo," and again expatiated on their hard and laborious existence :—

We'd just got through the final by the lucky star of grace,
When to Clinical we came, and were going to make our name.
We flattered Sister Clinical and put her in her place,
And we told a lot of people were to go ;
And we told them other things they didn't know.

As we enter into Clinical
For a snappy morning round,
Then from bed to bed we bound
And the critics we confound ;
We can sound a heart and read a chart ;
We can end a round before we start,
And we never have the slightest bit of trouble.

This life's a matter of trouble ;
It seems to be like a bubble.
You blow and make it just double its size.
We've taken it as a theme song.
We'll tell you now of the ding-dong.
There's been a battle of ping-pong outside.

Who's been chopping down the trees ?
Planted, so they thought, by Bright,
Till the Super. wrote a letter
Putting the editors right.
Dr. Ryle was most annoyed,
Bought himself a pen or two,
And when he'd bought some ink he sat down,
And didn't write, " I love you."
Then off he went and, by shaking up Hurst,
They both wrote letters that bullied and cursed.
Who's been chopping down the trees ?
That was what they asked all day ;
And though Dr. Witts is leaving,
These trees are going to stay.

Stephen came next, and Howell again was capricious on Capri, Mackenzie was still paternal, and Jacoby by now was at least 200 per cent. pure.

Addison Ward was the last to be visited before "tea." Johnson sang of " Miss Otis "—a tale of grim realism—while King and Whitteridge sang their songs again with still greater fervour.

Tea over, a slightly ataxic group of " Niggers " assembled in the Colonnade to invade Dorcas. Here a member of the staff was heard to remark that these were the best " Niggers " for 30 years, which is saying a great deal. After Dorcas, Cornelius and Lazarus were visited, and the *grand finale*, as is usual, took place in Astley Cooper.

Here Johnson sang again his song of blueness and the sensible note of Dr. Ryle, Nicolai " Mourned " again, and Fowler told his ghost story with appropriate horror.

Once upon a time there was a nurse
Who filled a hypodermic in the dark ;
She gave too much and made the patient worse—
So she cut her throat and jumped into the Park.

Ah ! yes, she did this long, long years ago,
And she comes up at night to tell us so.
With her head tucked underneath her arm,
She makes the nurses cower ;
With her head tucked underneath her arm
At the midnight hour.
She wanders on the balcony and drifts in through the door ;
She stands behind the nurse and whispers, " Don't give her any more."
While little drops of blood go " pitter, patter " on the floor,
From her head tucked underneath her arm.

In the ward there was a wheezing chronic,
Skin and lips of violet hue ;
Whether he was heart or just pneumonic,
No one knew what made him blue.
They gave him leeches and the drugs hypnotic,
Sedatives and tonics, too ;
Cony thought he was neurotic,
Blue him up with CO_2.

In despair they took him to a combined round,
Where doctors, Jew and Gentile, black and white are found.
Doctors Marshall and Witts took turns to shout ;
Doctor Hurst couldn't hear what the case was about.
He said, " Yes, I heard. It's quite absurd.
He's not the slightest bit blue."
Doctors Poulton and Grant were most intent
On securing the case for the oxygen tent.
Though all have died when once put inside,
Yet they never die blue.
Doctor Abrahams then remarks, " On behalf of all the clerks
I should like to be the first to convey our gratitude to Dr. Hurst."
Dr. Ryle then struck a sensible note :
" From the absence of teeth and the lump in the throat,
The opinion I'll venture—
He's swallowed his denture ;
That's why little boy's blue ! "

This concluded a really successful show. Undoubtedly we can congratulate Mackenzie and his band of " Niggers," on producing one of the best performances we have seen.

We have said nothing of the riddles. They were topical and typical, and the name Witts seemed the most popular on which to pun. The following are some examples :—

Q. Why is Guy's Hospital so clean ?
A. Because in 15 years it has never made George D'Erty.

Q. What does Dr. Hurst do when he has had too Mutch ?
A. Marshalls his Witts and Eyres a taxi.

Q. Why is Theatre III like a church ?
A. Because when you open the door there Nils Eckhoff.

Q. What happened to the prettiest massage student on Dr. Douthwaite's round ?
A. Nathan Mutch.

The " Niggers " would not like us to conclude this account of their journeys through the wards without making a very warm tribute to the tireless energy of their accompanist, C. E. M. de Gruchy, whose ability to follow them in their happy-go-lucky wanderings from key to key was truly remarkable.

The programme was very kindly supplied by Messrs. Ash & Co. Here is a reprint of the last page :—

Mary Theatre.
THE COMBINED ROUND
Featuring
Adolph and the Wogs
Under the personal direction of **A. F. Hearsed**

Front Lodge Theatre.
THE SLEEPERS
by **N. E. Porter**

Old Vic Theatre.
THE LEG PULLER
by **G. F. Gibett**

The G.U. Theatre.
STREAMLINE
Including the 1822 Overture
A Rue D. Thompkin's Show.

Gibb's Theatre.
THE COVERED WAGON
By **Miss Diagnosis.**

Stephen Theatre.
THE PASH ON PLAY
Featuring
A. H. Toothwaite and His Massage Girls

Theatre IV.
THE STRUGGLE
With Cyclo Propane
By **Sir Francis Slipaway**

Neurological Theatre.
I LIFT UP MY FINGER
By **C. P. Sighmonds**
Continuous performance from 10 till 2.

Dermatological Theatre.
Xmas Pantomime
ALI BARBER
The rashest show in town.

Clinical Laboratory Theatre.
THE LADY OF THE ANÆMIAS
By **Leslie Whits**
For a limited run prior to removal to
St. Bart.'s Theatre.

THE OXYGEN TENT
A Cure for the Blues
Apply to—
E. P. DOULTON & CO.
The only firm handling this article.

WHY TOLERATE FAILED FORCEPS ?
TRY OUR CÆSAREAN SECTION
Done while you wait
Frank Kook & Co.

AUNTIE BETTY REPLIES

Junior Pro.—I should remember to warm it next time. I hope his cold is better by now.

Messrs. Slot and Slack write :—

" On our epoch-making flight to Australia we took Hurst's Mixture regularly every night. The result was we ran perfectly all the way."

A Case of Mikulicz's Disease

Reported by Mr. W. H. Hamilton, M.R.C.S., L.R.C.P.

THE following case is of interest as an example of a rare condition, and also to illustrate the dramatic results which sometimes follow deep X-ray therapy.

The patient, a married woman of 63, was admitted to Clinical last May. She was sent up by her doctor on account of enlargement of the lachrymal, parotid and submaxillary glands. The previous history of repeated hæmatemesis appeared to be irrelevant.

Before Treatment

Ten years ago she sustained some trivial injury to the right side of the neck, following which a swelling the size of a hen's egg appeared. This swelling went down after some time, but did not altogether disappear, but persisted until 18 months before admission.

Eighteen months ago the patient noticed a small lump in the left side of her neck. This was followed by enlargement of the old swelling in the right side. Later there appeared swellings under the chin, and finally above the eyes. These swellings slowly and painlessly increased in size. giving rise to no symptoms at all. She had lost two stones in weight over the last six years.

On admission, it was found that in addition to the swellings of the face and neck, there were two enlarged glands in each supraclavicular region and several small subcutaneous nodules in the skin round the elbows. Further examination revealed a liver which was just palpable below the costal margin, and a mass in the epigastrium and under the left costal margin, smooth and continuous with the liver. There was no other abnormality.

A blood count showed 5,100,000 reds, 7,220 whites, with 30 per cent. of lymphocytes. A chest X-ray was suggestive of glandular enlargement in the mediastinum. A test meal showed achlorhydria and some delay in emptying. Wassermann reaction was negative.

A diagnosis of Mikulicz's syndrome was therefore made, and a gland was removed for section. Culture from the gland was sterile; Dr. Nicholson's report on the section was, "a lymphosarcomatous hyperplasia with fibrosis."

On Dr. Marshall's advice a course of deep X-ray treatment was given; the subsequent striking alteration in the patient's appearance is shown by the photographs.

After Treatment

I am indebted to Dr. Marshall for permission to publish the notes of this case.

"Experientia Docet"

By T. F. Todd, Esq., F.R.C.S.

IT is said that the wise man makes a mistake but once, while the fool repeats himself. Then there is the wise fool who is non-committal. It occurred to me that a few remarks about the experiences gained as Resident Surgical Officer in a large provincial hospital might be of interest to some of the *Gazette's* readers who find themselves in the position I was in 18 months ago, when, having finished my House Appointments at Guy's, I was desirous of obtaining a wider practical experience of general surgery before commencing to specialise in any one branch.

I had heard vaguely of the Lancashire Royal Infirmaries, and what marvellous places they were in which to obtain operative experience, and when an appropriate resident surgical officer post became available at one of the largest of these I was fortunate enough to be appointed, and I found myself with very little let or hindrance in the senior resident post of a voluntary hospital with nearly 400 beds. This alone speaks well of the advantage of having done my house appointments at Guy's, for many more experienced, but less hall-marked, men were applicants for this post. The holding of a Fellowship Diploma is a *sine qua non* of most of these appointments, and the new diplomate finds himself accepted as a surgeon, whereas he knows only too well that in these days the Fellowship is really but a licence to practise surgery—a necessary licence, but in itself no real criterion of surgical *nous*, judgment or skill.

The scheme of work was very similar to that at Guy's. There were several consultant surgeons, who conducted their own Out-Patients from which their list cases were compiled. All emergencies were admitted under the care of the surgeon for the week. Most weeks the emergencies approximated to 20 cases, up to one-half of which were acute abdomens, and the remainder fractures and other injuries, and acute mastoids. This, of course, does not include medical emergencies nor obstetric cases.

The resident surgical officer was deputed by the consultant surgeons to deal with the bulk of surgical emergencies, the surgeons themselves operating on a few cases, while their house surgeons were permitted to carry out the operations required for the more straightforward abdominal emergencies. In addition, the R.S.O. was entrusted with a great many of the ordinary list cases. In 12 months I had personally performed over 500 major operations, ranging from cholecystectomy to panhysterectomy, all the more common abdominal emergencies, many operative reductions and fixations of fractures, not to mention a number of obstetrical manœuvres. In fact, the R.S.O. has to be a Jack-of-all-trades, and has to be prepared to extract an impacted breech as an appetiser, with a Schwartz's operation as a liqueur—a very hospital dinner intervening.

It was an encyclopædic year, and I think many cases will be quite instructive to record. I shall never forget one case which is a striking example of the ability of Nature to cover the would-be surgeon. After a whole day in the theatre a middle-aged man of indecipherable facies, owing to a mixture of dirt and what-not, was admitted as a strangulated hernia. He was stone-deaf, deafness being a very common feature among mill-workers, and no history could be obtained, but a large tense hernial swelling occupied the left scrotum. After a too-hasty examination I accepted the outside diagnosis, and proceeded to operate for a strangulated inguinal hernia under general anæsthesia. Imagine my horror when I found the hernial sac to contain a large hernia *en glissade*, and a collection of peritoneal exudate similar to that found after a perforation. My next move was to open the abdomen via an exploratory paramedian incision, where I soon found the perforation in the prepyloric region, and dealt with it by simple over-suture. Returning to the hernia I attempted to reduce it when the next catastrophe occurred—a tear in the mesentery. There was nothing for it but to resect the herniated colon, and this was rapidly done by a guillotine technique, the two ends being sutured together by Paul's method and left protruding from the groin wound with two Paul's tubes *in situ*.

The mortuary did not claim its own, but ten days later the paramedian incision broke down, and the next move was the re-suture of a ruptured abdomen. Again the patient did not turn a hair. The next episode was concerned with the closure of the fæcal fistula. I crushed the spur with a clamp six weeks after the original operation, and the fistula began to close gradually. Further crushing was necessary before all the fæces were deflected into the normal channel, but finally the patient left hospital cured of both his perforation and his hernia *en glissade*, and very impressed withal. Comments would be superfluous.

One morning, whilst dilating a cervical canal as a preliminary to an amputation of the cervix, I had the pleasant surprise of perforating the fundus

uteri. As this was my first experience of this occurrence I was very worried, and I proceeded to a vaginal hysterectomy very much as a blind man walks down a street. However, I learned how to perform an operation I have since learned to appreciate, and the patient was relieved of a uterus no longer of any real use to her. Incidentally, when examined some six months later she was found to be cured of the uterine prolapse for the treatment of which she had originally attended. Since this case my experience of fundal perforations has been more extensive, and I have learned that Fowler's position is the simplest and surest treatment.

A doctor's son, aged about ten, was admitted with tetanus, and I had the opportunity of injecting by various routes some £60 worth of antitoxin in order to procure a successful result. It is an interesting experience to administer such expensive treatments, and must be good training. Just before he was to be discharged the boy developed an acute appendicitis, which was not allowed to pass untreated. No tetanus bacilli were found in the appendix.

Incomplete abortions are very common in Lancashire as my experience went. It was found necessary to evacuate the uterus on numerous occasions. Slippery elm bark appeared to be a favourite method of interference here, as in some parts of London. Tar cancers were seen not infrequently—a new disease to me. A variety of almost generalised epitheliomatous change in the exposed skin areas was seen a few times, and was apparently of similar ætiology.

One feature in abdominal work struck me very forcibly—the unpopularity of the McBurney gridiron incision for appendicectomy. Beyond the ones I have myself performed, and those I have assisted house surgeons to perform, I have only once or twice seen this incision made since I left Guy's. The surgeon in the provinces seems, in my limited experience, strangely afraid of this incision. Having had the good fortune to have been house surgeon to Mr. Rowlands, I was at least *au fait* with this incision. I well remember once asking Mr. Rowlands to allow me to use a paramedian incision in a case he was to assist me with, on the grounds that I could not properly explore the abdomen through a gridiron incision. His answer was that I should learn to make a gridiron incision correctly—before I finished his appointment I feel I had at least learned this from him. It has been my routine approach to any suspected acute appendix, unless I could almost say it was a definitely pelvic one, and on only one occasion have I had to close the incision and reopen the abdomen. This was in a young woman admitted with a general peritonitis, and who turned out to have a perforated suppurating left ovarian dermoid. A left lower paramedian incision was obviously the one of choice, and the gridiron was closed with no harm done. On another occasion a lump in the right flank diagnosed as an appendix mass turned out to be an acutely inflamed gall bladder full of stones. Cholecystostomy was successfully performed without difficulty through the gridiron, and the tube brought out in the usual site through a stab incision. My approach was subjected to a barrage of criticism in this case, but I submit that even the most experienced surgeons sometimes fail to differentiate between a high acute appendix and an acute cholecystitis. I remember opening one abdomen on the diagnosis of perforated peptic ulcer, to find the condition one of a perforated appendix lying in contact with the under surface of the liver, associated with a congenital non-descent of the cæcum.

Another incision I learned from Mr. Rowlands to value is that of Kocher for cholecystectomy. Obesity and gall-stones are as synonymous in Lancashire as in London, and I found this incision quite invaluable. It always appeared to me that it would be an equally good approach for perforated duodenal ulcers, to some of which I had had much difficulty of access through the usual upper mid-line or paramedian approach. I used the Kocher incision in about 12 cases where I was confident of the diagnosis of perforated duodenal ulcer, and I can vouch for the greatly improved access it gives, though it sounds somewhat heretical.

Two cases of acute intestinal obstruction due to an impacted gall-stone fell to my lot. I diagnosed neither pre-operatively; one stone was impacted in the upper jejunum, whilst the other was in the middle ileum. Both cases were very ill on admission, and both died. Another missed diagnosis was an intussusception due to an invaginated Meckel's diverticulum in a boy of seven. An end-to-end anastomosis of the small gut following a resection was, fortunately, successful.

In one of the few abdomens I considered drainage necessary an acute obstruction developed before discharge. Subphrenic abscess was an unknown quantity, and I have become gradually less and less inclined to drain the peritoneum. The careful post-operative use of acetyl choline and pituitrin seemed to me to avert or avoid the dangers of ileus. Routine belladonna medication and carbon dioxide inhalations reduced the number of collapses or pneumonias to a quite insignificant residue.

To turn from the abdomen it was a pleasant contrast to remove a displaced internal semilunar

cartilage, to resect a rib, or to perform an exploratory craniotomy. No one will deny that the ultra-specialisation of surgery to-day deprives many of the wide experience of their predecessors, but this does not apply, as yet, to the provincial R.S.O. The operative fixation of a fractured patella or olecranon is pleasant even to the palate of a would-be gynæcologist, especially when he is able to proceed from this field to the perineal one, and deal with a procidentia, or perform a trachelorraphy.

With a turnover of about 500 maternity cases each year, of which up to an hundred were emergencies, it is not surprising that some interesting obstetric problems cropped up as well. So long as a half-a-crown dilatation of the cervix is regarded as a necessary indication for the application of forceps, some Lancashire districts will continue to supply an abundance of clinical material in the form of failed forceps cases. For the tyro seeking obstetrical experience a plenitude is to hand; disproportion would seem to be relatively common, and ante-partum hæmorrhage even more so. One case of total cortical necrosis of the kidneys occurred, and one of delayed chloroform poisoning, *inter alia*.

This has been a very discursive account, but I hope that I have given some idea of the variety of experience that can be gained in a year spent as R.S.O. at one of these Royal Infirmaries. I am sure my experiences would be similar to those I would have obtained in any like hospital in a similar capacity. No one would question the interest of an operation list that includes a semi-lunar cartilage excision, a simple herniotomy, a panhysterectomy, a cholesystectomy, one or two perineorraphies, and a laparatomy for possible gastric carcinoma. This was typical of what was to be had twice weekly. In fact, often I feared that flat foot would be my reward for such experience. And to help matters, there was always a Thomas's splint to be fitted or a Kirschner wire to be inserted, or even such a simple remedy as a catheter might be needed.

I trust that I have justified my point. Anyone desirous of a wider general experience of surgery before final specialisation will find the provincial R.S.O. appointments excellent for this purpose. Above all I learned the value of the training I had received when I started to assume the much greater responsibilities such a post necessarily entails.

The Nurses' Dance, 1934

THE Nurses' Dance was held in the Nurses' Home on December 28th. It had been known for some time that an edict had emanated from the Matron's Office to the effect that fancy dress was to be compulsory for the nurses, so that when I entered the portals of the house I was not surprised to find myself issued with a mask. This I placed over my eyes, and thus disguised I was introduced to the Matron, who had not followed the example set by her nurses and, much to my disappointment, was not in fancy dress. The preliminary introduction over, my partner guided me to the ballroom to take part in the dancing, which had already begun.

It is difficult to describe the wonderful sight that met my eyes as I glanced round the room and took stock of my surroundings. Here indeed was a world of make-believe; every conceivable fancy costume had been devised. There was Little Bo-Peep, unfortunately without her sheep; Alice in Wonderland carrying a March Hare; Anne Boleyn carrying her head tucked underneath her arm; a schoolboy; two Guy's patients in red dressing-gowns, who must have felt the heat exceedingly; representatives of speed, and a host of others.

I was dancing supremely well, and, taking advantage of my masked face, which I felt sure was disguising my identity, was frisking about like a young lamb. I was about to chide two nurses for coming dressed as Sisters, when my partner fortunately corrected me just in time and informed me that they were "the women in blue," there to keep the peace. Somewhat abashed and feeling very guilty, I looked around me and saw to my horror that my conception of a modern *bal masque* was mistaken, and that, in fact, I was the only one who had not doffed his mask. My error corrected, I quickly joined in the general decorous behaviour of the other guests.

Supper-time soon arrived and exhausted by my dancing, I set to on the varied assortment of trifles, cakes, blancmanges, ices and other dainties, which were set before me in a manner which would have done justice to the most hardened trencherman of the Middle Ages. My appetite assuaged, my partner invited me to take part in the dancing again, and so entrancing was the music that I was only too ready to try my feet once more. I should have stated earlier that my partner saw that my dance programme was well filled, and that I had

an opportunity of dancing with all the greatest beauties of the evening.

The clock chimed midnight all too soon, and I feared the ball had come to an end ; but no, the Matron allowed us an extra 15 minutes of joyous hilarity, and away we went again, banishing dull care. The poor minutes slipped by quickly, and many were the cries of " Encore ! Encore ! " when they had passed. Nothing, however, would move the Matron, and the evening had to come to an end, like all the best things in this tiresome world.

As we all joined hands and sang " Auld Lang Syne " I took one more glance at the galaxy of beauty around me and thought to myself what a pity it was that these dances come but at Christmas time. Our thanks are due to Matron and all those who worked so hard to give us all such a good time and such a merry evening. I felt very grateful to my partner for warning me in time about the " women in blue." D.K.

Correspondence

Reminiscences

To the Editor of the GAZETTE

SIR,—Some few months ago when an obituary notice in your columns told of the passing of Bevan Brown, I had in mind to write you of a Guy's gathering of which he was part host. Now F. G. Gibson has gone, too.

I have before me the menu of a lunch which was given by eight Guy's men at the Canterbury Club, Christchurch, on March 22nd, 1932, to one of their old teachers ; it is signed by A. B. O'Brien (1898-1906), now an ear, nose and throat specialist ; W. Mark Brown (1914-20), a gynæcologist ; F. G. Gibson (1895-1902) ; M. G. Louison (1899-1906) ; J. Bruce Stringer (1904-14), a very healthy and good-looking man ; F. V. Bevan Brown (1909-14) ; C. H. Gould (1908-15), and E. J. Cooke (1911-15). The card is headed " Guy's Hospital," with our motto underneath. One felt that they were reliving their life at Guy's and thinking of all their old friends and were extending hospitality to all their old teachers in the person of one.

I am glad of the opportunity this letter offers of bearing witness to the high esteem in which Guy's is held in the Dominions, owing to the work of these men I have mentioned and others.

" Freddy " Gibson was a remarkably fine man. Older than most of his contemporaries, he had been a schoolmaster before he came to Guy's ; in those days he exercised a great influence on all who knew him, and one had every reason to be sure that he was one of the foremost in upholding the repute of his old school in the country of his birth.

Yours, etc.,
C. H. F.

The Residents' Ball

To the Editor of the GAZETTE

SIR,—May I make it known that it has been decided to hold the Residents' Ball this year at Grosvenor House, on Friday, the 22nd of March.

A date later than that customarily chosen has been arranged in deference to very numerous requests.

Lady Shipway has very kindly consented to act as our hostess.

Detailed notices will appear shortly, and tickets are now available. Those intending to be present are advised to make early application ; this facilitates organisation, and avoids the last-minute rush on the limited number of tickets that usually remain as the date of the event approaches.

Yours, etc.,
T. E. HOWELL,
Hon. Sec., Ball Committee.

College Cloak Room

To the Editor of the GAZETTE

SIR,—As a victim of one of the recent thefts in the College I should like to suggest that the authorities take some action.

If an outsider is responsible, the porters should be instructed to keep stricter watch and both the door and window which open on to a row of coats should be kept closed.

If the dreadful suggestion is true that the culprit is a member of the Hospital, notices should be posted in prominent places to warn the unsuspecting.

Again, the authorities should provide more adequate locker accommodation on the side of the hospital, since even if one has a locker in the Medical School it is impossible to use it after 5.30 p.m.

The ideal arrangement is a cloakroom with an attendant to issue metal discs for articles received.

Personally I feel that any such scheme would be worth the trouble and expense.

Yours, etc.,

J. B. GOOD.

The Students' Club,
Guy's Hospital, S.E.1.

Sonnet

(With apologies to Wordsworth)

The Nurse is too much with us ; late and soon,
Sitting there knitting, she lays waste our powers :
Little we drink but mist. alb., till it sours ;
They have taken our pants away, removed our shoon !
This tea they give us every afternoon ;
The doors that keep on slamming at all hours,
And are unfastened now ; visitors' flowers ;
For salts—magnesium sulph.—we are out of tune ;
It moves us not. Good gad ! I'd rather she,
The Matron, truckled to my need each morn ;
While Sister, leaning on my swollen knee,
Injects some stuff that makes me more forlorn :
And, as I calculate the Surgeon's fee,
A taxi-driver blows his wretched horn.

Reviews

Materia Medica for Nurses. By A. MUIR CRAWFORD, M.D. (Glas.). Published by Messrs. H. K. Lewis & Co., Ltd. Pp. 102. *Price* 3*s.* 6*d.*

IN this small work are sketched the essential facts of pharmacology. The subject matter is presented from an essentially practical aspect ; included at the back is a useful list of important doses. The chapters first introduced in this edition include a brief description of some of the more important proprietary drugs. It is a book that should be of use to the nurse both for examinations and for practical purposes after qualification.

Diseases of the Skin. By J. FERGUSON SMITH, M.A., M.B. Second Edition, Catechism Series. Published by Messrs. E. & S. Livingstone. *Price* 1*s.* 6*d.*

THE Catechism Series is well known and now covers practically the whole field of Medicine, although if there is a subject which does not lend itself to learning by means of the system of question and answer it is Medicine. The fact that this member of the series has been edited a second time indicates that the book has been found useful and has fulfilled its purpose. Probably its greatest value is as a dictionary for the terms used by the dermatologists, but, in addition, methods of treatment are described quite fully.

Surgery and Surgical Nursing. By MICHAEL BULMAN, M.D., M.S., F.R.C.S., M.C.O.G. Published by Messrs. Faber & Faber, Ltd. *Price* 10*s.* 6*d.*

A MOST suitable book for nurses both during and after training. This book contains the latest methods and treatment, and has been planned very well for reference and reading.

Notice

THE LIGHT DEPARTMENT DANCE

This year the Light Department are holding their Dance at the New Burlington Galleries, Vigo Street, off Regent's Street, W.1, on Wednesday, January 30th, from 9 p.m. until 2 a.m.

To avoid disappointment applications for tickets must be made as early as possible, as numbers are being strictly limited.

Double tickets will be 13*s.* 6*d.*, including refreshments, and can be obtained directly from Miss Saldanha, Miss Robinson, Miss Ledwidge, or from any member of the staff of the Light Department.

Sport

Rugby

Guy's v. London Scottish

THE match between Guy's and the London Scottish at Richmond on Saturday, December 22nd, ended in a draw of 8 points each, Guy's scoring a placed goal and a try (8 points) and the London Scottish a placed goal and a penalty goal (8 points).

On the run of play Guy's should have won comfortably, but, although a number of magnificent movements were carried out by the back division, their efforts were nullified at the final stage as the result of forward or missed passes.

Neither side was at full strength, but whereas Guy's had a far superior three-quarter line, the Scottish defence covered well, and always had a man in hand to prevent any attack from becoming dangerous.

With P. K. Hopkins holding the advantage of the set scrummages, the Hospital forwards did exceedingly well, but in the line-out the Scottish were definitely superior.

In the first few moments the Hospital had to face a typical forward rush which compelled them to defend their 25. After two or three scrummages, Guy's were penalised, and P. G. Grant kicked a goal to give the home side an early lead.

Guy's took up the offensive immediately, and Giesen and van Steytler made a glorious breakaway, in which Giesen came up at full speed to accept the latter's final pass, but the whistle sounded for a forward pass.

The Scottish were dangerous soon after when Lucas intercepted a pass in his own half and took the ball to the other end of the field, but the Hospital defence recovered in time and his kick ahead was touched down just before he could get his hand to the bouncing ball. The Hospital forwards then led a great raid into the Scottish half, but a wild kick ahead enabled Guthrie to clear comfortably.

For the remainder of this half Guy's kept their opponents on the defensive, but just before the interval Geddes brought off a magnificent tackle when he caught C. G. Wright on the line.

Guy's continued to have the better of the opening exchanges, and early on the Scottish were forced to touch down after Alexander had nearly gone over with a grand dash.

A little later Giesen just missed a drop at goal, and this was quickly followed by some magnificent passing between the Hospital threes.

After one effort had gone astray as the result of a pass forward, Alexander broke through the centre and, after an exchange of passing, Giesen crossed for a try, which Alexander converted. However, the lead was short-lived, and after a bustling Scottish forward rush Hill scored a try and Geddes converted, the ball hitting an upright before passing over the bar.

Splendid combination between Alexander and Wright led to the Hospital equalising; the latter tried to break through, but, finding his path obstructed, passed inside to Alexander. The latter, although well marked, found a small gap in the defence and was through in a flash, to score a try which he just failed to convert.

From now onwards it was a ding-dong struggle, but, although each side attacked in turn, the defences held out and there was no further score.

Team.—E. C. Sharp; C. G. Wright, P. C. Alexander, J. E. Giesen, R. M. de Gregory; J. van A. Steytler, D. I. Chapman; M. R. Kark, P. K. Hopkins, C. S. Darke, E. R. Davies, G. J. van der Merwe, A. R. Clarke, T. A. Hale-Monro, R. O. Yerbury.

Guy's v. Old Alleynians

AT Honor Oak Park on Saturday, December 29th, the Hospital finished their first half of the season with a comfortable win over the Old Boys by 4 goals (1 penalty) and 5 tries (33 points) to 2 goals (1 penalty) and 3 tries (17 points).

Although the ground was very muddy and heavy following the recent heavy rains, the game was one of the fastest and most thrilling seen this season. From the outset both sides seemed determined to let the question of sheer defence go by the board, and, while there was never any faltering or mild-mannered methods in going for the man, each side went all out in dashes for the line whenever an opportunity presented itself.

In the first minute Guy's carried out a spectacular three-quarter movement, and Giesen was stopped from crossing only a yard from the line. Keeping up the pressure, Guy's penned the Old Boys in their 25, and another bout of passing ended when the final pass to Wright went astray with an open line before him.

Soon after this Guy's had a shock when Talbot intercepted in his own half, carried the ball to the hospital 25, and punted over the full-back's head. Luckily, Sharp recovered quickly and went down to the ball before Talbot could get to it.

For a few minutes Guy's had to defend desperately, but eventually Steytler broke away, but Alexander dropped the ball when going strong

for the line. However, a moment later Alexander made full amends when he spotted the narrowest of gaps in the visitors' defence and, gathering speed, he flashed past the two centres and, when faced by the full-back, sent in Giesen behind the posts for a try, which Alexander converted with ease.

Guy's gradually worked their way to their opponents' 25, and Hale-Monro (always well to the fore in any attack) caught the full-back in possession, and from the scrum that followed the ball was sent with amazing rapidity to Wright, who just managed to cross in the corner.

The Old Boys retaliated immediately, and, following some clever passing, Williams touched down too far out for Pettifer to convert. On the right wing Pettifer and Griffith continued to be a source of trouble to Guy's, and on two occasions they had hard luck in not scoring. However, Stanyon-Jaques was penalised for picking the ball out of the scrum, and Pettifer landed a fine goal from a difficult angle.

The next movement produced the best try of the match, and was the result of a magnificent effort by Alexander, who cut through the centre at an amazing speed and, after completely deceiving the defence, passed to de Gregory, who raced in behind the posts for Alexander to add the goal points. This was quickly followed by another score for Guy's when Giesen took a penalty and dropped a delightful goal from midfield.

A minute from the interval the Old Boys made a determined attack on the right and, following an exchange of passing, Pettifer passed inside to Godfrey, and the latter crossed for a try, which Pettifer improved.

The second half opened sensationally, for within a minute the visitors scored a splendid try; after failing to score in the right corner, the ball was transferred rapidly to Spencer, who sent Talbot over. The score was now 16—14, in favour of Guy's, and the excitement was intense. Several minutes passed before another score was registered, and on this occasion Giesen intercepted, kicked past the full-back, and de Gregory dribbled on and eventually touched down for Alexander to add the goal points with a fine kick.

Following a scrum in the Old Alleynians' 25, Stanyon-Jaques stole away on the blind side and dodged his way over the line with two opponents clinging on. Alexander hit the upright with another good kick.

A long punt ahead by Pettifer led to a misunderstanding between Sharp and de Gregory, and Pettifer raced up to score in the corner.

In the closing stages Guy's were definitely superior, and Wright, after working his way over to left centre, ran for half the length of the field and scored a fine try, but Alexander again hit the upright in trying to convert.

The Old Boys never gave up trying, and Sharp distinguished himself when he went down to a forward rush and saved a certain try. Kark relieved when he dribbled the ball to the visitors' half, and eventually Giesen managed to elude the opposing defence and passed to de Gregory, who simply walked over the line for another unconverted try.

Just on time, Steytler created an opening for Alexander, and the latter flung out a long pass to de Gregory, who crossed in the corner.

It was an excellent game, and both teams are to be congratulated on the splendid manner in which they overcame the adverse conditions.

Team.—E. C. Sharp; C. G. Wright, P. C. Alexander, J. E. Giesen (Capt.), R. M. de Gregory; J. van A. Steytler, K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, C. S. Darke, E. R. Davies, G. J. van der Merwe, T. A. Hale-Monro, R. O. Yerbury, H. H. Crabb.

Association

Guy's v. Old Cholmeleians

THIS game was played at Honor Oak Park on Saturday, October 17th, and in which the Hospital were defeated by 5 goals to 1.

During the first half both teams played excellent football, with Guy's having slightly the advantage of the play. The Old Cholmeleians scored first when the Hospital goalkeeper misfielded a shot and one of the Old Boys' forwards dashed in and scored. About five minutes later Guy's equalised when Jones-Lewis passed back to Lee, who centred to Harvey, who scored, placing it in the top of the net.

Unfortunately, just before half-time Guy's left-half was injured and played on the right wing for the remainder of the game.

For about 20 minutes after the interval the game was even, but then the Hospital's defence seemed to give way and the Old Boys' outside-right scored. After this, the Hospital's forward line did not have many opportunities of attacking, the half-backs being more concerned with defence than with setting the forwards moving. Following this goal, the Old Cholmeleians pressed hard and scored three more goals without reply.

And so a most enjoyable game ended with the score of five goals to one in favour of the Old Cholmeleians, who thus avenged a defeat at the beginning of the season.

Result.—Lost, 1—5.

Team.—A. N. Marley; R. L. V. Henderson, R. C. Jackson; D. W. Bugg, D. A. Priestley, H. A. Lee; J. Patterson, G. James, R. W. Harvey, G. G. G. Rees, H. Jones-Lewis.

Hospital Information, etc.

Notice

GUY'S HOSPITAL MEDICAL SCHOOL M.R.C.P. EXAMINATION

Arrangements have been made, in common with St. Bartholomew's and St. Thomas's Hospitals, in connection with the April, 1935, and subsequent examinations for the M.R.C.P. The Course is limited to Post-Graduates of the three Schools concerned. Members of the class will be given a Clinical Assistantship on one of the Medical Firms, for a period of one month at each of the hospitals in rotation.

For further particulars, apply to the Dean, in the Medical School Office.

T. B. JOHNSTON,
Dean.

Pass List

UNIVERSITY OF LONDON THIRD (B.D.S.) EXAMINATION IN DENTAL SURGERY.

December, 1934.

R. F. Pusey.

SOCIETY OF APOTHECARIES OF LONDON. FINAL EXAMINATION.

December, 1934.

Midwifery.

N. O. Lucas.

CONJOINT BOARD. D.P.M.

Neurology and Psychiatry.

G. B. Palmer.

UNIVERSITY OF CAMBRIDGE. MEDICAL DEGREES.

Michaelmas Term, 1934.

PART I.

Surgery, Midwifery and Gynæcology.

L. I. S. Campbell — J. P. Singer
J. B. C. Murdoch

PART II.

Principles and Practice of Physic, Pathology and Pharmacology.

L. I. S. Campbell — G. S. Steele-Perkins
J. R. Dickinson — G. E. Walker
J. B. C. Murdoch

ROYAL COLLEGE OF SURGEONS OF ENGLAND F.R.C.S. FINAL EXAMINATION.

J. B. Batchelor — J. K. Elliott
W. G. Gill

UNIVERSITY OF LONDON. SECOND EXAMINATION IN DENTAL SURGERY.

December, 1934.

PART I.

Pass.

D. A. Priestley — W. A. Vale

Anatomy and Physiology.

A. G. Beaton — H. Rees
P. K. Hopkins — D. G. Sharp

Papers by Guy's Men

Arthur F. Hurst. Dosage above the Pharmacopæial maximum (illustrated). *Lancet*, 1934, ii, 1379.

Alan H. Todd. The treatment of pes cavus (President's Address). *Proc. Roy. Soc. Med.*, 1934, xxviii, 117; Sect. Orthopæd.

Philip Turner. Unusual perforations (President's Address). *Proc. Roy. Soc. Med.*, 1934, xxviii, 181; Sect. Surg.

J. Vernon Braithwaite. Grantism, virilism and Pseudohermaphroditism. *Proc. Roy. Soc. Med.*, 1934, xxviii, 148; Sect. Study Dis. Child.

G. B. Dowling. (1) Pemphigo treated with Germanin. (2) Myxomatous degeneration associated with hyperthyroidism. *Proc. Roy. Soc. Med.*, 1934, xxviii, 109, 110; Sect. Dermat.

O. Gayer Morgan. (1) Superficial corneal opacities; (2) Neurofibromatosis of orbit. *Proc. Roy. Soc. Med.*, 1934, xxviii, 187-189; Sect. Ophthal.

Appointment

E. Matthews, M.Sc., L.D.S., has been appointed Director of Prosthetics, Dental School, University of Manchester.

Change of Address

E. T. Conybeare, M.D., M.R.C.P., 44 Queen Anne Street, W.1. *Welbeck* 4374

Births

HALL-SMITH.—At Hatfield County Gates, Bournemouth, W., on Thursday, December 15th, 1934, to Ruth (née Havard), wife of Dr. G. W. Hall-Smith—a daughter (Jillian).

WATSON.—On 29th December, 1934, at Weybourne, The Avenue, Watford, to Phyllis (née Martin Clark), wife of L. K. Watson, M.R.C.S., L.R.C.P.—a son.

Marriage

PALMER—LEE.—On December 24th, 1934, at St. Luke's, Maidenhead, by the Rev. Canon Fry, Geoffrey Blake, eldest son of Mr. C. J. Palmer, Hampton, Middlesex, to Millicent Marian, the youngest daughter of the late Mr. and Mrs. John Lee, of Coventry.

Eds. { D. P. K. / P. W. C.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX *19th January* 1935 *Number* 1213

PASSIM

THE passage through its second reading in the House of Lords of the Bill for the registration and regulation of Osteopaths has given rise to very little comment in either the lay or medical press, and, apart from editorials in the leading journals, there has been nothing to indicate that the medical profession appreciates the danger of the position. Much of the popular daily press has for a long time made the G.M.C. and the B.M.A. its particular butt and it has not missed the opportunity, provided by the introduction of this Bill, to sharpen its wits at the expense of these two bodies.

We were fortunate in being able to publish in these pages towards the end of last summer a most able account by Dr. Douthwaite of the history of osteopathy and what it means. Osteopathy is a system of healing which is diametrically opposed to orthodox medicine, its foundations are of the flimsiest nature and, as Lord Moynihan has pointed out, the two systems cannot work in unison. If one is right, the other must be wrong, and as upholders and believers in orthodox medicine we cannot allow, by reason of apathy, this Bill to come into force at any rate as it stands, or in anything like its present form. We are too prone to think of the osteopaths merely as bone-setters and manipulators of fractious joints, whereas in point of fact they seek to heal and express opinions on every field of medicine. Their teaching is akin to a journal we received the other day, which stated in most emphatic terms that diphtheria was not caused by the Klebs-Loeffler bacillus and was not benefited by anti-diphtheritic serum.

This Bill, which has been allowed the dignity of being read twice in the House of Lords, seeks to empower the registered osteopath with almost every privilege and responsibility of the orthodox practitioner, even to the extent of allowing him to sign the death certificate, the consequences of which are almost impossible to conceive. We have not received any text-book on the principles of osteopathy, but we understand that to become a registered osteopath the prospective candidate will have to undergo a training of four years, during which time he will cover every aspect of the healing art from obstetrics to jurisprudence, so that, presumably, he will be regarded by the layman as equally competent to deal with illness as the orthodox practitioner, whereas in point of fact, by reason of the shortness of his training and the unscientific nature of its basis, he will be a grave danger to the community, especially to those members of it whose intelligence will not allow of rational criticism. We do not wish to condemn any system of healing out of hand merely because it may enter into competition with our own, but we do feel that osteopathy has no sure foundation, and that it is still a cult, the legal recognition of which will not only be dangerous, but will open the door to every other cult which may raise its head and catch the popular imagination.

GUY'S has recently suffered the loss of two of her most distinguished sons in the deaths of Sir Maurice Craig and Basil Laver. Sir Maurice Craig had been consulting psychologist to the Hospital since 1926, and was one of the most widely known of our physicians. Basil Laver was a surgical registrar here from 1923 to 1926, and then left to take up a surgical practice in Northampton. The obituary notices testify to his great enthusiasm, and his many friends will lament his death at so untimely an age.

WE wish to congratulate Mr. T. T. Stamm on his appointment to the post of junior orthopædic surgeon to the Hospital. He fills the vacancy left by the death of Mr. Trethowan in September last year. Since October, 1932, Mr. Stamm has been surgical registrar to the Orthopædic Department.

His association with the Hospital commenced in 1923, when he entered the Medical School. In 1929 he was Mr. Turner's house surgeon and President of the Residents. Subsequently he was Demonstrator of Anatomy and Operative Surgery in the Medical School.

WE have received notice from Lady Fripp that the fourth Alfred Fripp lecture on "Happiness and Success" will be given by Sir William Jowitt, K.C., on Wednesday, February 13th, at 5 p.m., at University College. The Chair will be taken by Captain Ian Fraser, C.B.E., M.P.

Elsewhere in this number we publish a letter from the Dean in which he points out the work done in child psychology by the first holder, Dr. Rogerson, of the Sir Alfred Fripp Memorial Fellowship. We wish to congratulate his successor, Dr. Lay, on his appointment.

WE have been asked to inform our readers that applications for seats at the Residents' Play should be sent to the President of the Residents as soon as possible. The play will be performed from February 12th to February 15th. February 2nd is the latest date on which applications for seats can be accepted, and their allocation will be made as soon after as possible. As in previous years, no charge will be made for seats, and the expenses of the production will be borne by the Residents' Fund. This has been reduced to a somewhat parlous state by the unexpected receipt of a large bill from the College Catering Company, but we hope that this will not necessitate any curtailment of the ambitious schemes of the producers, who have promised us a truly mammoth show this year.

WE should like to congratulate R. C. S. Dick on his selection to represent Scotland in the match against Ireland. International honours have not been gained by a member of the Hospital side since W. H. Lewis played for Wales in 1930.

ON Saturday, March 2nd, the Annual Dental Dinner will take place at the May Fair Hotel. It will be preceded during the morning and afternoon by a Clinical Meeting in the Dental School.

WE would remind our readers that the Annual Subscription to the *Gazette* and *Directory of Guy's Men (Medical and Dental)*, 12*s.* 6*d.*, post free, is now due, and should be forwarded to The Manager, *The Gazette* Office, Guy's Hospital, S.E.1.

WE are very pleased to be able to announce that the sale of Christmas Cards this year realised the sum of £83 15*s.* 7*d.* The whole of this amount is devoted to the funds of Guy's Hospital, and are provided gratuitously by Messrs. Ash & Co., Ltd.

Obituary

SIR MAURICE CRAIG, C.B.E., M.D., F.R.C.P.

SIR MAURICE CRAIG will perhaps be best remembered as far as his contribution to psychiatric literature is concerned by his text-book, which has been a standard one for many years. Written in a clear and simple fashion, it must have formed the introduction to psychiatry of many doctors now in practice. The presentation was somewhat formal, but there was, in accordance with the fashion of the time in which it was first written, always a strong bias towards the physical ætiology of mental disease. Yet few people could have had a more intuitive knowledge than Sir Maurice himself of the personal factors that are involved in producing mental illness, for he owed much of his success, which was admittedly immense, to his charming personality and his gift of handling people. His book, in numerous flashes of insight, frequently expresses however the role of personal factors in the production of mental illness, and was much ahead of anything in this country of its time, in the comprehensive account given of psychological medicine backed up by intimate personal experience.

He was identified in his theoretical views especially with the doctrine of nervous exhaustion. In accordance with this he advocated the use of small doses of sedatives over a long period. He was especially impressed by what in his view was the importance of insomnia in the production of mental illness. He felt that the combating of this symptom was of great importance in care and treatment. His views on the importance of nervous exhaustion were much influenced by his experience of "shell-shock" cases during the War, and there is much to be said for his emphasis on the desirability of rest in bed for many types of psychological illness, although he did not fail to point out with characteristic caution and shrewdness that cases of this sort very readily contracted a "bed-habit," as he put it.

In his later years he used to say that, having worked for many years within the walls of a mental

hospital, he had come to devote the subsequent years of his life to keep people from becoming candidates for treatment in these institutions. In other words, he felt increasingly that the preventive aspect of mental disorder was the important one, and it was no doubt this view that among his other activities led him to take an active part—and, in fact, to be the principal agent—in forming the National Council for Mental Hygiene. His foresight was also responsible for the foundation of the Cassel Hospital for Functional Nervous Disorders in 1921 with a munificent endowment by Sir Ernest Cassel, whose attention was called by Sir Maurice Craig to the existence in civil life of a very large group of psychological illness similar in its manifestations to the war cases of "shell-shock."

No note, however, on his services to psychological medicine would be in the least adequate without a further reference to Sir Maurice as a man. There must have been few with whom he came in contact who did not feel the kindliness of his nature. He was gentleness itself; he readily forgave his enemies and was very loyal to his friends.

R. D. G.

IT is eight years since Sir Maurice Craig reached the age which brings to an end a man's active co-operation in the work of Hospital and School, and eight years suffice for the life history not of one generation of students, but of several. To present Guy's men, as to their immediate predecessors, Craig can be known only by name, but all those who were his students from 1903 to 1926 have, I do not doubt, a very clear and lively recollection of their all too short association with him.

Craig succeeded, in December, 1902, to an office which, before his time, had demanded of the holder only a course of lectures upon mental disorders at Guy's, and a series of demonstrations at Bethlem. Visits to the wards at Guy's had been rare, and took place only when a consultation upon some particular patient was asked for. Of duties in the Out-Patient Department there were none.

Although the busiest of men, with continuous demands upon his time from all directions, Craig soon set himself to alter this, to bring the study of psychological medicine into the daily work of the Hospital among out-patients, and to prepare the way for the development of the Department as it is established now under Dr. Gillespie. To this end, for many years, he associated himself with Dr. Hurst in the work of the Neurological Out-Patient Department. There and in the lecture theatre he was supreme. Tall and singularly handsome in face and figure, confident of himself, and with great ease and charm of manner, he seemed to us a very striking and attractive addition to more work-a-day figures among the Staff whom it might be our lot to serve. With a shrug of expressive shoulders, with a wave of the hand, or with an irresistible smile, he could express a world of meaning. To watch the variation of his approach to different patients, encouraging one, repressing another, winning trust and gratitude from all, was in itself an education. More than most he had that quality of absorption in the problem of the moment, without which no success can ever come to a physician. All his patients felt that in their trouble he was wholly with them and for them.

It was Craig's lot, comparatively early in life, to be immersed in the cares of a very large practice and one of a peculiarly difficult, responsible and exacting character. With health that was never absolutely robust, but strong in his own confident knowledge of his subject, equipped with a very helpful sense of humour and a kindly philosophy of life, and sustained by the highest ideals and a strong sense of religion, he bore a burden of work which at times might well have seemed intolerable. No one, we may be sure, can succeed in Psychiatry who is not himself actuely sensitive to the pain and sorrows of others. There were times when the strain under which he lived was apparent and when he came near to complete exhaustion. To his friends it was clear that he owed the preservation of health and energy to two fortunate circumstances of his life. In the first place he withstood the strain because of his own wise, cheerful and confident nature, and in the second place because of the great and unmixed happiness of his family life. Pulled in this direction and in that by the incessant calls of his work, he never ceased to be the centre of his home life, ready always to cope with its difficulties, great or small, as they arose, and with loving foresight to plan for the future. The restfulness and calm of his home, which could be maintained unbroken even during the long and critical illness of his only son, was a constant source of refreshment, and he sought no other. When, recovered marvellously from his own serious illness, in the last years of his life, he had to put a strict limit on his output of work, he found full compensation in the freedom which gave him so many more hours to spend quietly at home.

In those last few years the feeling of strain and of the burden of his work was gone, and the disaster of his illness seemed to have brought to him the peace that was of necessity lacking before. Then suddenly and unexpectedly this calm, ordered, quietly busy life, too, was terminated, to the lasting sorrow of many.

H. C. C.

BASIL LAVER, M.S., F.R.C.S.

WE regret to announce the death on December 28th, 1934, of Mr. Basil Laver at the age of 40 after a long illness. He was one of Guy's most beloved sons, and his death will be deeply mourned not only by his intimate friends, but also by all those who came in touch with him either as patients or as medical colleagues. Son of Harry and Emma Laver, both of Southampton, he was born at Middleburg, Transvaal, South Africa, on 18th December, 1894. He was educated at Bedford Modern School, which he left after being Head of the School and Captain of Rugger, Boats and Fives. He entered Guy's in 1912, but in 1914 was mobilised with the Artists' Rifles. In 1915 he joined the Royal Field Artillery, and was for two years Adjutant to the 124th Brigade. Towards the end of the war he was sent back to England to qualify. In 1922 he obtained the M.R.C.S., L.R.C.P. qualification, and the following year took the M.B., B.S. of London. He held the Arthur Durham Travelling Studentship, and took the opportunity of studying at the Mayo Clinic. Then from 1923 to 1926 he was a Surgical Registrar at the Hospital. He took the F.R.C.S. in 1925 and the M.S. in 1926. In this year he was elected to the staff of the Northampton General Hospital and a consulting surgeon to the Stamford and Rutland General Infirmary. In Northampton he quickly won for himself by his tireless devotion to his work and by his lovable personality a very high esteem, so that his practice was considerable. He was secretary of the Northampton Branch of the B.M.A. He managed to find time for other activities in spite of the work which he did. When he first came to Guy's he played rugger for the "A" team, and then in 1919 he was captain of the Guy's Lawn Tennis Club. Towards the latter end of his life he was ranked first amongst the squash rackets players of Northampton, and also played golf. He married Miss Joyce Crockett in 1927, and leaves her a widow with a daughter 4½ years of age, to whom all will wish to express their deepest sympathy.

One of his medical colleagues writes of him: "His death robs not only Northampton of one of its most distinguished medical men, but also many others of a friend whose sincerity and steadfastness will keep his memory green."

ALL who worked at Guy's during the years immediately following the war will remember Basil Laver—enthusiastic, hard-working, impulsive, warm-hearted and loyal. I should like to add my tribute to one whose early death has robbed our profession of a very promising surgeon, and our hospital of one of its finest pupils. His shock of black hair over a forehead corrugated to an extraordinary degree whenever he looked worried—an habitual expression with him when intent on a problem; the direct gaze of his dark eyes; his way of expressing his views in a pained voice as if voicing a personal grievance, and then, as he finished, relaxing into a hearty laugh; all these come to me as I think of him in those days. He was dresser and later house surgeon to Rowlands when I was his registrar, and his registrar when I was demonstrator of anatomy. Few have equalled him since in either capacity, and association with such a junior was a privilege and a stimulus.

Most men are good registrars. The store of knowledge and the impetus that carried them through the Fellowship are still with them, and the call of future achievement spurs them on. These surroundings are to a large extent artificial, and with many the stimulus dies when they are changed. A surgeon's quality can only be judged by the use he makes of his early maturity. In this respect Laver showed his real worth, and proved himself one of the best of his generation. On his appointment to Northampton General Hospital he became known as a skilful and successful surgeon, and soon established a large practice. But his success in no way diminished his industry, his zeal for information, or his determination to improve his work still further. Whatever of value was written on surgical subjects he studied it; wherever good work was being done he made a point of seeing it and applying the lessons he learned to his own problems. On two occasions he was a member with myself of a party visiting surgical centres on the Continent. On these visits Laver took copious notes of all he saw, illustrated by sketches of apparatus and technical points in the operations. When he returned home, his first task was to get these memoranda expanded and typed in orderly fashion before the memory of the visit became blurred. Copies of these notes which he sent me have on many occasions served to remind me of details which I had forgotten. He was, I believe, the first surgeon in Britain to use the intravenous drip method, and certainly the first to perfect himself in the technique of pulmonary embolectomy and to make preparations for its performance in his hospital. He was also one of the earliest to recognise the value of the cinematograph in post-graduate teaching. All his work was thorough, like himself.

During his last illness his finest qualities were apparent. The same determination which in Stockholm took him to a side table to write up the day's notes while the rest of us were relaxing was manifest in his courageous denial of defeat. He was determined to get better, and if the will of a stout heart could have availed he would be here to-day. Few are privileged to be missed as he will be by his friends.

W. H. O.

DEATH, to those dear ones left lonely and bereft, must always seem a tragedy, more especially when he taken away is still youthful.

Basil Laver, barely forty years old, has been taken from the world where he spent his brief span devoting his skill and sympathetic understanding to the alleviation of sickness and suffering in his fellow beings.

Of his professional activities many are better qualified to speak than the writer. I was privileged to count myself among his friends, and to them it must seem that something ineffably sweet and joyous has been torn from their midst.

Of the simplest nature, it was the clean and natural things of this world that appealed to him most.

He was equally keen in work and sport, and brought to both a gaiety so unaffected and spontaneous that it infected all around him.

Happy as possible at home, he gave his wife and child the perfect companionship which can only come from true devotion, and he had for all children a deep love, which made them eagerly clamour to be with him.

To those grieving for him most one can only hope that Time, the greatest healer of all, may bring some measure of peace, and that it may succour them now to know that for all his friends "to know him was to love him."

To those who have Faith there can be no doubt that he himself is enjoying the reward he has so nobly earned.

E. G. S. W.

Sherlock Holmes and Dr. Watson

By Maurice Campbell

III.—WATSON'S PRACTICE; HIS SERVICE IN THE SOUTH AFRICAN WAR; AND HIS SECOND MARRIAGE

IN view of Watson's accurate medicine, it is interesting to review his student career and subsequent practice. Born about 1852, he must have started as a medical student at St. Bartholomew's Hospital about 1871, and it was then presumably that he played rugger for Blackheath (The Sussex Vampire). He qualified M.B., B.S., about 1876, and we know that Stamford was a dresser under him at Bart.'s, so he must have been house surgeon or obstetric resident. As he took his London M.D. in 1878, house surgeon seems less likely, and when we find that he might have been obstetric resident to that great man Matthews Duncan, our choice seems almost inevitable (The Study in Scarlet).

After going through the army surgeons' course at Netley, he was posted to the Northumberland Fusiliers in India. On reaching Bombay he found his regiment engaged in the second Afghan War and joined them at Candahar, but was later attached to the Yorkshires and was wounded in the shoulder at the battle of Maiwand (July, 1880). He was in hospital at Peshawar, and had nearly recovered when he got enteric fever; this was a severe attack, and led to his being invalided out of the army, so that he arrived back in England towards the end of the year.

It was under these conditions that he started the famous partnership with Holmes at Baker Street. After the Study in Scarlet (1881), Watson decided to write an account of the case, though it was not published till six years later. By 1883 he had become Holmes' "intimate friend," and assisting Holmes and writing accounts of his cases seems to have been his main interest and occupation (The Speckled Band). Like many men without a regular job, he spent much of his time and money following horse-racing (Shoscombe Old Place) and dabbling in stocks and shares (The Dancing Men); but he still kept up his medical interests, and had the presence of mind to save the life of the unfortunate Mr. Melas, who was suffering from carbon monoxide poisoning (The Greek Interpreter, about 1885). In 1887 he was hurriedly called to Lyons as Holmes was ill, and was relieved to find that there was nothing more seriously wrong than a breakdown from overwork (The Reigate Squires), for which he arranged for Holmes to have a rest at Reigate with Colonel

Hayter, who also had been under his professional care in Afghanistan.

In the Sign of Four (1888), Watson had been reading the latest text-book of Pathology, and was able to give a decided opinion about the absence of valvular disease, after listening to Sholto's heart. The fact that he carried his stethoscope with him showed that he liked to take any opportunities of medical work that came his way, and his familiarity with Dr. Trevelyan's monograph on Obscure Nervous Lesions showed that he was still reading widely (The Resident Patient).

In July or September 1888 Watson became engaged to Miss Morstan, and this naturally brought an end to the Baker Street ménage and led to his settling down to earn his living. In February 1889, shortly after his marriage, he bought a practice in the Paddington district, and by March he had started work, as Holmes deduced from the smell of iodoform, the black stains of silver nitrate, and the bulge in the side of his top hat where he secreted his stethoscope (A Scandal in Bohemia).

Old Mr. Farquahar, from whom he had purchased it, had at one time an excellent general practice, which had shrunk from twelve hundred to three hundred a year owing to his age and an affliction like St. Vitus's dance. Watson was sure that with his energy he would build it up again, and certainly for the first three months he was kept very busy. When Holmes visited him one morning in June he was reading the *British Medical Journal* at breakfast, and was able to hand over his work for the day to his next-door neighbour, whose practice Holmes deduced from the wear of the steps had been much less successful than Dr. Farquahar's (The Stockbroker's Clerk). The same month he took another day off in the West of England (The Boscombe Valley Mystery).

In July again, although he had had a busy day, he was able to go down with Holmes to Aldershot (The Crooked Man) and to Woking (The Naval Treaty). By August his practice had steadily increased, in spite of these interruptions, and he had several patients among the railway staff at Paddington Station, through one of whom he introduced Holmes to the adventure of the Engineer's Thumb.

In September he was staying with Holmes for a few days as his wife was away with her aunt (The Five Orange Pips), and in October he was still there, and must have taken his holiday and spent it down on Dartmoor (The Hound of the Baskervilles). Mrs. Watson was evidently away much longer than was expected at first, and probably this was the beginning of her illness—indeed, it is not clear if she was back before January 1890 (The Valley of Fear), though this may have been a second absence.

In 1890 Watson seems to have been busy with his practice, for in A Case of Identity he had not seen Holmes for several weeks, and when he was sent for in Holmes's supposed illness he had not seen him for some time and knew nothing of the case (The Dying Detective). In October he was able to spare an afternoon, but that was Saturday (The Red-Headed League); indeed, Watson was so busy with his practice during this year that he had records of only three of Holmes's cases (The Final Problem).

Early in April 1891 Watson was living with Holmes again, and was able to go down to Winchester (The Copper Beeches). Evidently Mrs. Watson was away again and was again forced to stay away longer than was expected, for later in the month when Holmes called on Watson late at night she was still away. Watson said that his practice was quiet and could easily be left to his neighbour while they went to Switzerland to avoid Moriarty (The Final Problem). After such a happy marriage it seems impossible that Mrs. Watson could have been away so much unless her health had broken down, and Watson's loss of interest in the practice after the successful year in 1890 can best be explained in this way.

When Holmes returned in 1894 he found Watson settled down in practice again, this time in Kensington, and evidently successfuly, for Watson says, " All day as I drove upon my round " (The Empty House). Sherlock Holmes referred to the death of Mrs. Watson, remarking that hard work was the best antidote to sorrow; she must have died about 1892, and most probably from tuberculosis. One might guess at first that she had inherited her father's liability to arterial disease and died from angina pectoris, as he had in his early forties (see page 526); but she was only thirty-two when she died, which makes this unlikely. Further, her appearance and her tendency to blushing and pallor (The Sign of Four) are more compatible with the tuberculous than with the anginal diathesis, and a sudden unexpected cardiac death would not account for her long absences from home. It is equally likely that she inherited her weakness from her mother, who died when Mrs. Watson was a child, probably from tuberculosis, the most likely cause for a mother and daughter both dying young. Her first long absence from home was in September and October, and probably a chill in the beginning of the English winter led to a cough and signs in the lungs.

Within a short time of Holmes's return we find that Watson had given up his second practice and

was back in his old quarters at Baker Street (The Norwood Builder). The call to the old life was too strong, and he had sold his practice in Kensington at a very good price to a young Dr. Verner —a distant relative of Holmes. From 1894 to 1899 there was a steady stream of cases in which Watson collaborated, and accounts of these cases from Watson's pen, most of them being published in The Return of Sherlock Holmes. This seems an appropriate moment to consider the vexed question of the position of the famous lodgings presided over by Mrs. Hudson.

221*b* BAKER STREET.

There is no tablet on the wall of 221*b* Baker Street, to commemorate the long residence of Holmes and Watson, with interruptions from 1881 to 1903. Indeed the very site is uncertain, but many of the stories contain indications that it was somewhere in the middle half.

" Holmes," said Watson as he stood one morning in their bow window looking down the street, "here is a madman coming along." He was a man of fifty, tall and portly, with a black frock coat, but his actions were in absurd contrast to the dignity of his dress and features, for, he was running hard with occasional little springs (The Beryl Coronet). The distinguished banker was coming to see Holmes and had arrived at the Inner Circle Station, so this shows that their lodgings were not very near the upper end of Baker Street. Moreover, Watson used the Wigmore Street Post Office and not the one in Baker Street itself, as he would have done if living at this northern end.

" It was a bitter night, so we drew on our ulsters and wrapped cravats about our throats. Outside the stars were shining coldly in a cloudless sky. Our footfalls rang out crisply and loudly as we swung through the doctors' quarter—Wimpole Street, Harley Street, and so through Wigmore Street into Oxford Street. In a quarter of an hour we were in Bloomsbury " (The Blue Carbuncle).

" A minute later we were in the street and walking for home (from Brook Street). We had crossed Oxford Street and were half-way down Harley Street before I could get a word from my companion " (The Resident Patient).

" ' Your hat and boots, Watson, quick. Not a moment to lose.' He rushed into his room in his dressing-gown and was back again in a few seconds in a frock-coat. We hurried together down the stairs and into the street. Dr. Mortimer was still visible about two hundred yards ahead of us in the direction of Oxford Street " (The Hound of the Baskervilles).

These three quotations show that 221*b* Baker Street was not near the lower (Oxford Street) end, but do not help us to place it more closely. We might expect this, for a man is so familiar with the neighbourhood of his own home that he is unlikely to describe it in any detail.

But there is one more precise reference when they were returning by an unusual route to avoid observation ; Holmes stopped the cab at the corner of Cavendish Square and passed rapidly through a network of mews and stables, the very existence of which Watson had never known. They emerged into a small road lined with old, gloomy houses, which led them into Manchester Street, and so to Blandford Street. Here they turned down a narrow passage, passed through a wooden gate into a deserted yard, and opened a back door (The Adventure of the Empty House). They were in Camden House opposite to their own quarters and able to watch them unobserved.

The turn from Blandford Street might have been to the north into Blandford Mews or to the south into Kendall's Mews. Anyone who walks along the two will find the description of the deserted yard more apt for Kendall's Mews ; and Watson wrote of turning down, which again makes the turn to the south more likely, because the two mews run parallel to Baker Street, and turning *down* this is certainly to the south, for the northern ends of both Baker Street and Wimpole Street are *upper*.

This gives a choice of the block of ten houses now numbered 17—35 on the west side of Baker Street, presumably the 27—35 half of this block, as otherwise Holmes would have been more likely to enter Kendall's Mews from the south than from the north end. Number 27 is a story higher than the others, and so it caught my eye, and I noticed that it is still in the occupation of Hudson Brothers. Clearly this was the house, and Mrs. Hudson, when she ceased to be landlady and became housekeeper for Holmes on his retirement in 1903, left the lease of her house to her sons, who have built up this business.

Mr. Roberts states in a footnote (*loc. cit.*, p. 14) that Dr. Gray C. Briggs, of St. Louis, deduced that the house in which Holmes and Watson lived was 111 Baker Street (*see* F. D. Steele, " Sherlock Holmes ") ; but I have been unable to obtain this paper, so do not know on what evidence this identification was based. Mr. Blakeney, also in a footnote (*loc. cit.*, p. 49), thinks this is certainly wrong, and, using the directions from the Adventure of the Empty House, deduces that it must have been 45 to 51 or 29 to 35, and states that local authority accepts 49 as the site. I have already given reasons for choosing 27 to 35, and to this extent agree with Mr. Blakeney, but he must have

turned up into Blandford Mews instead of down into Kendall's Mews.

As though to complicate matters further and to hide the identity of such an important historical landmark, the numbers in Baker Street were changed twelve years ago. I am indebted to the postmaster of the Western District P.O.—the Wigmore Street office which Watson used—for the information that the ten houses at present numbered in odd numbers 17, 19, etc., to 35 (from south to north), used to be consecutively 79 to 70 (from north to south); 27 was therefore 74. Now Watson must have had some reason for writing 221*b*, and surely it is not too fanciful to suppose that to disguise 74 he said $74 \times 3 = 222 = 221b$. Holmes had lived in Montague Square when he first came to London and must have been very attached to the neighbourhood, for 74 was the house in Baker Street as near as any to Montague Square. After this digression we must return to Watson's career.

WATSON'S SERVICE IN SOUTH AFRICA

We are nowhere told that Watson took part in the South African War, but the importance of deduction was the main scientific thesis of Holmes, so is it likely that Watson would have left us without problems to employ our own faculties of deduction? Only too often he omits all record of his own life except in so far as it is pertinent to the cases of Sherlock Holmes, and we are lucky in having so many details of his early career to explain how they come to share rooms in Baker Street.

As an old army doctor without any real ties Watson could hardly have done less than offer his services to the War Office, as he did in the Great War when he was much older (His Last Bow). His love of adventure was so keen that he was never happier than when he was setting off on some exciting chase with his old army revolver in his hip pocket, and it would make him anxious to be out in South Africa and would easily overcome any difficulties there might have been about his re-engagement, possibly as a civil surgeon. He was only 47 and not too told for medical service, even if he could not be a combatant.

Another argument pointing the same way is that, though he had given up the Kensington practice in 1894, he started again towards the end of 1902 (see later). It would have been difficult to do this after such a long interval as eight years if he had been entirely without medical experience during this time, but very natural if he had just returned from South Africa and found that medicine still made a strong appeal to him. And, as we shall see later, it was to surgery that he returned, and only his work in South Africa would have made this possible.

From internal evidence it was very much in Watson's mind, as The Three Garrideps of June 1902 is dated "shortly after the conclusion of the South African war" (peace was signed in May), and The Blanched Soldier of January 1903, "after the conclusion of the Boer War." From the similarity of style I can imagine that Watson really wrote "The History of the South African War", though it is published under the *nom de plume* "Conan Doyle."

But the decisive appeal is to dates, and these prove it in a way that has not been realised. Except for 1891-94, when Holmes was away and supposed to be dead, there are some records for nearly every year, making any other gap very significant, and the only other gap is for the three years between the summer of 1899 and June, 1902. War was declared in South Africa in October 1899, and peace was signed in May 1902, and the coincidence of these two periods first made me realise that Watson had served in the war.

I am aware that Mr. Roberts (*loc. cit.*) places The Adventure of the Priory School in May 1901, but in my view the events took place in May 1899; the Duke of Holderness was married in 1888; as he was not young and already had an illegitimate son, he would be very anxious for an heir as soon as possible, so that Lord Saltire was probably born in 1889; he was ten years old when he went to school, and had only been there a few weeks, *i.e.*, 1899. Mr. Roberts relies on the statements that the Duke of Holderness had been Lord Lieutenant of Hallamshire since 1900, and that May 13th was on a Monday in 1901. But the former was an extract from a book of reference, and Watson would use the current year-book when he edited the story, for the Valley of Fear tells us that he was very particular about his reference books being up to date. Was Watson such a careful editor that we can rely on his being accurate about the latter when he spoke of Monday, May 13th? I fear not, for in the Sign of Four a letter is dated July and a few pages later Watson says it was a September evening; and the Red-Headed League contains the same confusion between June and October.

The following considerations seem to me conclusive about Watson having been absent during this period. Watson makes one categorical statement, viz., "Holmes was in active practice for twenty-three years, and during seventeen of these I was allowed to co-operate with him and keep notes of his doings" (The Veiled Lodger); the figures are too precise to be rough measures—1903

marks the end of this period, for The Creeping Man in September of that year is described as one of the very last cases handled by Holmes before his retirement, and Watson was with him then. In 1907 he had been living quietly in Sussex for some time (The Lion's Mane), and Watson had passed almost beyond his ken.

Holmes was thought to have been killed in his struggle with Moriarty by the Reichenbach Falls on May 3rd, 1891. He reappeared in London in April 1894, explaining that he had climbed up the side of the precipice after Moriarty's death and had thought it wise to remain in hiding for a time; he had therefore been travelling in Tibet and Persia and had been away three years. Adding these three to the twenty-three years of his practice gives us 1878-1903. The Musgrave Ritual, when Holmes was living by himself in Montague Street, was his third case, and other evidence fits in with this being in 1878; Holmes had left Cambridge* at least two, and certainly not more than four, years before.

Watson did not join Holmes till 1881 (The Study in Scarlet), so that if he had been with him till 1903, except for the three years of Holmes's absence, they would have worked together for twenty years; but we are told it was only for seventeen. No direct statement is made as to when these three years were, but, as no cases are recorded from 1899 to June 1902, this clearly was the period, and there seems no more likely explanation than that he was out in South Africa.

WATSON'S SECOND MARRIAGE AND THIRD PRACTICE

The problem of Watson's second marriage is baffling from lack of facts; as Holmes would have said, it is a mistake to theorise in advance of your data, but here, unfortunately, we are not likely to get more data and must do the best we can. Watson seems to have been a man who was quite satisfied with his adventurous life with Holmes, and only turned to the humdrum round of practice when marriage made a regular income necessary. The following are the pertinent facts :—

1. In June 1902, Watson was shot at and wounded in the thigh (The Three Garrideps).
2. In September 1902, Holmes managed to break off the engagement of Miss Violet de Merville to Baron Gruner—one of the most unpleasant characters in the whole series of stories (The Adventure of the Illustrious Client).
3. In January 1903, Holmes was forced to write his own account of the adventure, because, as he said, the good Watson had recently deserted him for a wife (The Blanched Soldier).

Mr. Roberts (*loc. cit.*) suggests that Violet de Merville was Watson's second wife, arguing that in making subsequent inquiries about her health Watson, with his chivalrous interest in those who were in trouble, would have been led much further; and that his experience in Afghanistan would have given him a point in common with her father, Colonel de Merville "of Khyber Fame," and would make the engagement less unlikely than it might seem from the exalted circles in which the de Mervilles moved.

Mr. Blakeney in his appendix (*loc. cit.*) attacks this view without suggesting any alternative, mainly on the following grounds :—

(*a*) She was young, and Watson was fifty—a rather inadequate reason.

(*b*) The social gulf would have made such a marriage very unlikely in 1902.

(*c*) Watson makes no mention of it in writing the story, and there is no reason why he should not have given the facts as he did when he became engaged to Miss Morstan.

(*d*) Had Watson married Violet de Merville he would not have roused unhappy memories by recording such an unsavoury incident in her life.

The last two reasons seem conclusive, and there are two others. Watson must have married in or before December 1902, and, considering what happened in September, it seems quite impossible that Miss de Merville should have married anyone as soon as this. The second reason is less important in itself, but gives the only clue to the baffling problem of who his second wife was.

In September the story opened with Watson and Holmes in a Turkish bath, and Watson had already moved to his own rooms in Queen Anne Street; it must have been recently, for in June he had been sharing the old rooms with Holmes. No one with Watson's limited means would have made this move except with a view to practice, and it is unlikely that he would live there instead of having a consulting room unless he had already made up his mind to get married. It would take some time to take this decision, to get a house, and to move in, so that by August at the latest

* I acknowledge with regret that Holmes was at Cambridge. He was bitten by Trevor's bull dog "on the way to the chapel"; the bull dog would not have been allowed inside college, therefore Holmes was living in lodgings; it was some time during his first two years, therefore he was at Cambridge; for during those years Oxford (with her greater wisdom) would have insisted on his living in College.

Watson had settled to return to practice, and probably was engaged to be married—indeed, this was the most likely stimulus to the resumption of his medical life.

In June, when " Killer " Evans was disturbed in his secret hiding place with a large supply of forged bank notes, he shot Watson in the thigh. Watson felt a sudden hot sear as of a red-hot iron, and the next moment Holmes crashed his pistol down on Evans's head and sent him sprawling on the floor. Watson was helped to a chair by Holmes, who ripped up his trousers with a pocket knife, and Watson felt it was worth a wound to know the depth of loyalty and love which lay behind the cold mask, for there were tears in Holmes's eyes. Naturally, after this emotional scene he tried to make light of the wound and called it superficial, but he must have been laid up for some weeks and must have needed a good deal of attention.

Except Mrs. Hudson, who must have been quite elderly by this time, there was no one to look after Watson at Baker Street while he was confined to bed, and he must have had a nurse or entered a nursing home. He was fifty and, like most rugger players who have given up exercise, was probably rather stout, so it is quite likely that the wound was troublesome and kept him in bed for several weeks, through most of July. Knowing his sentimental nature, what was more likely than an engagement to his nurse and a resolve to resume practice and to take a house in Queen Anne Street, after talking it over with her during his convalescence? As these decisions were reached by August, there hardly seems time to have met anyone else, though, of course, he might have become engaged to a friend who visited him while on his sick bed.

Grace Dunbar must have been among these visitors, and I would like to think that she was the second Mrs. Watson. A few months before, in the problem of Thor Bridge, Holmes and Watson had visited her in prison when she was accured of killing the wife of the Gold King, Neil Gibson, whose secretary and governess she was. To quote Watson's own words : " I had expected to see a beautiful woman, but I can never forget the effect which Miss Dunbar produced on me. It was no wonder that even the masterful millionaire had found in her something more powerful than himself—something which could control and guide him. One felt, too, as one looked at that strong and yet sensitive face that even should she be capable of some impetuous deed, there was an innate nobility of character. She was a brunette, with a noble figure and commanding presence, but her dark eyes had in them the appealing, helpless expression of the hunted creature who feels the nets around it, but can see no way from the toils."

Certainly when he could write like this Watson was in the mood to fall in love, and the dark eyes recall the first remark of Mr. Darcy about Elizabeth Bennett and what it led to. Miss Dunbar must have been most grateful for her rescue from such a dreadful accusation, and most distressed to hear so soon after of Watson's wound. But I find it hard to think of Watson as a successful rival to the widowed Gold King, who would certainly have been popular with women.

And even had this difficulty been overcome it would not account for the end of the partnership with Holmes that was to follow so soon ; for Miss Dunbar would have been a second Miss Morstan, only too anxious to encourage Watson in this collaboration, and we might have expected 1903 to be another period as prolific of adventures as 1889 after the first marriage. Recalling the dictum of Holmes that whatever is emotional is opposed to that true cold reason which is to be placed above all things, reason must conclude that Watson did not marry Miss Dunbar, however much emotion would like us to believe that he did.

We know little of the second Mrs. Watson, but, reading between the lines, she does not seem to have been such a charming character as Miss Morstan. After his first marriage, Watson was encouraged to take a share in Holmes's investigations and was frequently away from home for this purpose—indeed, it is surprising that his practice was as successful as it was ; but after his second marriage there are very few more adventures recorded, so presumably his second wife was not as complacent. Perhaps we must blame her even for Holmes retiring soon after September 1903. Watson was married in December 1902, and perhaps, when a son and heir was born the following September, Mrs. Watson put her foot down and said that he must stick to his own work ; we can well imagine what a blow this would have been to Holmes, and it probably decided him to go into the retirement about which he had often been thinking.

There is one other allusion which has made me take this rather unfavourable view of Mrs. Watson. In the Adventure of the Veiled Lodger, Holmes was in a smoke-laden atmosphere with an elderly lady of the buxom landlady type when Watson entered, and Holmes is reported to have said that Mrs. Merrilow did not object to tobacco, if Watson wished to indulge his filthy habits. It is impossible that Holmes should have made this remark or that Watson should have added it as editor, considering their own habits as regards

smoking, and for this and other reasons it seems that " The Case Book of Sherlock Holmes " must have been edited by a third hand. Who more likely than Mrs. Watson ?—and I fear she introduced this remark because she was trying to make her husband give up smoking as well as sharing Holmes's work.

Watson's third practice was in Queen Anne Street, and this raises the question of whether he was a consultant or one of the few general practitioners in this neighbourhood. His third attempt seems to have been at surgery, and at first sight it seems unlikely that he could have had sufficient experience for we only hear of him with a general practice in Paddington and, later, in Kensington. But he must have started with some surgical experience in Afghanistan, and must have extended it with accident cases from his railway clientele from Paddington (The Engineer's Thumb). Even after he had given up his second practice he sat in silence all evening, deep in a recent treatise on Surgery (The Golden Pince-nez). And, perhaps even more important, the South African War would have given him plenty of recent surgical experience, and would have encouraged him to embark as a surgical specialist.

It is good to read that this last venture flourished, for in 1903 Holmes remarked that Watson bore all the signs of the busy medical man with calls on his every hour (The Mazarin Store), so Surgery gained what admirers of Holmes lost.

The Disappearance of Dentistry

A Paper read before the Guy's Hospital Dental Society, on Tuesday, 27th November, 1934, by Edward Dunstan, Esq.

MR. PRESIDENT and GENTLEMEN,—The word disappearance, which figures so conspicuously in my title, seems to all accounts, to have puzzled people. Unfortunately it is a word which calls to mind something strange and mysterious, something perhaps rather like a conjuring trick, which entertains us for a moment but leaves us incredulous in the end.

But how much more is this the case when the subject of this disappearance is a thing which we have come to regard as permanent and desirable in the extreme ; a thing, indeed, the very existence of which is inseparably bound up with our everyday interests and our prospects of making a livelihood.

When someone comes along and proposes to discuss the possibility of dentistry ceasing to exist, our first reaction is to treat the matter as a joke. We look upon the fellow with good-natured tolerance and regard the implications of his proposal about as seriously as we regard the solemn prophecies in " Old Moore's Almanac." Yet it is to be hoped, gentlemen, that if the title of this paper has occasioned amusement, it will also have aroused curiosity, for otherwise it will have failed in its essential purpose.

The task of tracing dentistry to its origin is obviously one which no sane individual would undertake. For certain it is that the date when a man first dared to meddle with the inside of another man's mouth is one of the blackest dates in the history of our species. It had better remain in obscurity ! However, for those who cling to a philosophy which claims for all things a proper beginning, there is no reason why dentistry, any more than original sin, should be excluded. Nevertheless, for this evening we are primarily concerned not so much with morbid things as with cheerful things, not so much with the beginnings of dentistry as with the prospects of its end.

Here someone will complain that to discuss any subject you must have an historical background, so, anxious to please, I will endeavour to supply one.

Dentistry in Ancient Egypt was certainly a highly developed craft, and no one can deny that probably older civilisations fostered the art of tooth-stopping. The hero of the " Arabian Nights," Caliph Haroun al Raschid, living in the ninth century, had his own dentist. But it seems likely that the latter practised his skill not upon the Commander of the Faithful himself, but upon those who incurred his displeasure, yet whom the mercy of Allah saved from the executioner. It is said that the mediæval Inquisitors thought of every conceivable form of torture to inflict on the heretic, and we can hardly imagine that they would have neglected a few choice dental operations. We read that in England of the Plantagenet period the Jews were forced to disclose the whereabouts of their hidden hoards by the threat of systematic dental extractions.

In the 16th and 17th centuries in France there was a living to be made at dentistry. It is recorded that the earliest filling material to be used in that country was lead. Nowadays we should not regard such a procedure as being in good taste, yet the French word " plombage " remains to

the present time denoting conservative work in the mouth. The 19th century, you will remember, was remarkable for quite a number of important events. Following on the French Revolution, taking place at the close of the previous century, there was an enormous rise of industrial production and concomitant growth of large towns with appallingly overcrowded and badly fed populations. There was a tremendous development of scientific discovery and mechanical invention, accompanied by an outburst of iconoclastic philosophies and pleasantly optimistic political theories. And last, but not least, it was by no means an accident that in such an expansive epoch, when such rapid and revolutionary changes were taking place in ways of living, that our profession should have received recognition, and with the Dentists Act of 1878 have come into its own.

But what of the present time? To-day we live in a world which is changed, some of the older generation would say sadly changed, from what it was. Many of the old illusions and ideals have been shattered by the Great War and the subsequent trend of contemporary history. Progress along lines which had hitherto been taken for granted cannot now by any means be guaranteed.

Where in this altered environment does our profession stand? What is the future we may anticipate for dentistry developing under such altered circumstances? I had thought, gentlemen, that by dealing with such questions as these, highly abstract and hypothetical as they may be, we might ever so gently stir the cauldron of controversy and cook up some interesting food for reflection.

If we look back over the last 50 years and consider what changes dentistry has undergone, perhaps no one mechanical invention or scientific discovery will impress us more than another. The exact date upon which this or that new technique was adopted for some dental procedure will not excite us in the least or tempt us to inquire into further detail. But what we shall seek in such an investigation will be any major change in the outlook of the profession, as a whole, as to the broad objects of its existence. These objects we must assume to be, socially speaking, altruistic—otherwise we shall have no basis for argument.

Looking, then, at the recent history of dental knowledge, we shall see that hitherto the main feature of interest upon which attention was concentrated was the development and perfection of a manipulative technique in the restoration of all possible teeth in the arch. Elaborate crown and bridge work was carried out and teeth were devitalised without much regard to surgical asepsis. The utmost ingenuity was exercised with the most excellent mechanical results. More recently, the ideal of mechanical perfection in the methods adopted and the appliances contrived to restore the normal masticatory power have been less emphasised, these measures have been increasingly regarded as purely remedial and necessarily subservient to the larger ideal of normal mouth hygiene and general health. Further, of still more recent date, has been the movement towards an adequate consideration of the general bodily conditions which may predispose to dental affections and the attempt to inquire into the possibilities of dental prophylaxis.

Of the two important changes which I have mentioned, one might say that the first was set on foot by Dr. William Hunter in 1910, when he read his famous paper on " Septic Foci " to the McGill University in Montreal. This, of course, is not to say that Hunter's views were not already familiar to British dentists before this date. I mention that particular time and place because I extracted the information from the new Encyclopædia Britannica, which notoriously sees every mortal thing through horn-rimmed Yankee spectacles. However, it is unquestionably true that the observations and criticisms of Hunter and other medical men of the time revolutionised dental opinion.

The second advance to which I referred cannot be so definitely dated as the first. It has been the offshoot of cumulative general research into nutrition, and particularly is it connected with the subject of vitamins. The work of Mrs. Mellanby is nowadays sufficiently known to have crept even into those, usually unimaginative, little dialogues which occasionally take place between examiner and student. I have, therefore, but to mention it in passing for you to recall the interesting points which it raises with regard to diet in its relation to the teeth. This line of work, taken in conjunction with all the growing volume of research into the ætiology of dental caries, seems to me to point in the direction of prophylaxis: that is, in the direction of some attempt to tackle our problem in a rational and scientific manner by going to its very roots and aiming at the *prevention* of the conditions, which we have hitherto tried only to cure.

There was once a good woman whose husband was poor and could afford no more than one overcoat. Every summer he would put his coat away in a cupboard and leave it there until the coming of another cold season, when he would need it again to protect him against wind and rain. But the wife found, when she came to take the coat out of the cupboard, that it was full of little holes. This dismayed her a great deal, so she set to work

with needle and thread to mend the holes. Every year it happened in the same way, and by and by the good woman became very skilful at her patchwork.

" See," she would exclaim, exhibiting the coat to a friend, " no one would know from the look of it that every year this coat becomes riddled with gaps and holes." And then she would go on to explain every cunning device with which she contrived to hide the coat's deficiencies. But one day one of her friends offended her by laughing in her face. " How foolish you are to keep on mending the holes," she said. " Don't you know that they are caused by moths eating up the fabric? You have but to put some camphor balls in your cupboard and all this labour would be saved."

This little story tells us something about the modern trend in dentistry. If we take the moths to represent the predisposing causes of dental caries, pyorrhœa alveolaris and other oral imperfections with which we have to deal, the one-and-only coat is the one-and-only mouth with its permanent set of teeth, and we have to look for the camphor lumps.

It is true that our problem is not so easily solved as was that of the industrious wife, but that it *is possible* of solution we will not be so pessimistic as to doubt.

Let us look for a moment into the consensus of opinion among dental men to-day upon the ætiology of caries. We shall remember from our Dental Anatomy course that C. S. Tomes, G. V. Black, Leon Williams, Hopewell Smith and others advanced theories on the chemical constitution and structure of the enamel, which lent support to the view that, once formed and erupted in the mouth, this tissue could not undergo any further calcification from within, via the blood stream, or from external surroundings (*i.e.*, the saliva). More recently, however, this view has been discredited, and it is now more or less generally admitted that enamel *can* undergo changes after the eruption of the tooth. Mr. Malleson has conclusively demonstrated the organic framework of enamel, and we have ourselves been privileged to see beautiful illustrations of the " prism cortex." Sprawson has investigated the physiological reactions of marsupial enamel, and has declared that it is " to be regarded as a living tissue that reacts to injury." " Human enamel," he says, " allowing for structural and calcific differences, shows similar reactions "; and " further, it follows that many of the conclusions concerning marsupial enamel must also be true of human enamel." Norman Bennett concludes: " That enamel is a vital structure, nourished from within as far as its outer border and possibly accessible to a slight degree to influences from without."

With these considerations in mind you will see that, supposing the chemico-parasitical influence predominates as an *exciting* cause to dental decay, for the predisposing causes, or relative susceptibility we may have to look, not so much at the local conditions as at deeper and more general factors. It becomes immediately more credible that general metabolic disturbances affecting the condition of the blood and the composition of the saliva may be important factors in the control of dental affections. It follows, moreover, that such things as dietary variations, as well as immediately predisposing to lodgement, fermentation and so on, in the mouth itself, may more radically influence the health of the teeth from wholly physiological causes.

Broderick enlarges on this theme, through some 350 pages of a fascinating and extraordinarily illuminating work which he entitles " Dental Medicine." In it he undertakes a review of some fairly recent biochemical research in its relation to dental conditions. He stresses, some might say beyond its due importance, the effect of the hydrogen-ion concentration of the saliva. He examines at some length the question of just *how* general metabolic changes bring about alterations in the salivary reaction and what physiological circumstances lie behind such metabolic variations. He discusses the endocrine organs, the respiratory and excretory systems and the influence of the inorganic buffer salts upon the reaction of the blood. He refers to the part played by vitamins in calcium exchanges and the influences of diet and natural environment upon the body mechanism. It is a remarkably interesting study. Indeed it was while I was reading this book that the devil seized me and tempted me to alter the title of this paper.

The thought of going through life preparing standard cavities in carious teeth, class I, II, III and so on, according to Black's classification, became odious to me. The conception of dentistry as an endless tinkering and conscience-trying compromise between duty and continual pain-infliction gave place to a prospect more pleasing. There was surely, I began to think, a worthy purpose for which to aim, and this was nothing less than the extinction of the very necessity for dentistry and hence of dentistry itself.

An interesting sidelight on the general nature of what Dr. Broderick and many others now believe to be contributory factors in the causation of dental deficiencies is given by a story which I will borrow from his book. " At a discussion dealing with prophylaxis and the incidence of

caries and its prevention . . . a dentist to a school of orphans was asked what condition the teeth of the orphans were in, and he replied that they were admirable, and this was because they (the orphans) went to bed early." This story appears at first, perhaps, somewhat reminiscent of the eccentric poultry farmer who claimed that his hens laid better if he gave them music in their roosting houses. But, unlike the latter story, it probably has some truth behind it. We are persuaded by Dr. Broderick that the orphan children benefited, dentally speaking, from being given good opportunity to recuperate their bodily energies and resist accumulation of acid products in the blood (and hence the saliva) due to katabolic or wearing-down physical activities.

In dealing with the hereditary factor in the question of immunity or susceptibility to dental disease, it cannot be too strongly emphasised that the condition handed down by inheritance is very unlikely to be a specifically dental condition. It is more likely to be a character, or set of characters, in the general make-up of the individual predisposing to, or generally associated with, the dental condition.

Bunting illustrates the constitutional factor in the susceptibility to caries by citing an interesting case of inheritance. " Two young men of Jewish parentage, who were brothers and who, although of approximately the same age and living under practically the same environmental conditions, presented very marked differences in their dental health and susceptibility to dental caries. The younger, aged 18½ years, was a large, well-built young man, apparently of the lymphatic type, but actually possessing a highly nervous temperament. He had large bones and his teeth were large, broad and well-formed. The molars and bicuspids presented low cusps, which were well worn. Upon inquiry, it appeared that he had inherited the lymphatic stature of his mother and the nervous temperament of his father. As far as dental caries was concerned, his mouth was entirely free from any apparent defect, and when cultures were taken it was found that there was no evidence of B. acidophilis.

" His brother, aged 20, was much smaller in stature, of a typical nervous type, whilst his teeth were manifestly poor in quality, having interlocking cusps. Although his life conditions, as far as environment was concerned, were identical to those of his brother, he had considerable dental caries and cultures from his mouth were positive to the B. acidophilis."

The latter account is re-quoted from Dr. Broderick's book, and serves to show that environmental factors must not be over-stressed in looking for predisposing causes. Constitutional factors also play a part and must always be taken into account.

At this point I can hear someone saying : " Ah ! but what about Bacteriology ? " " Is not the most important research into the ætiology of dental affections now proceeding in this direction ? " " Have you not overlooked this side of the question ? " " What about oral sepsis and the infection of the tissues by nasty-minded little germs ? " No, gentlemen, I have not overlooked it ! I have disregarded it. We are not concerned with the acid fermentation process which disintegrates enamel, and the peptonising process which digests dentine, for the moment. We are more concerned, on the contrary, with the general bodily conditions which lower resistance to any malignant bacteria whatever.

An absorbing chapter in Dr. Broderick's book deals with civilisation as a factor in the problem of dental caries. His main thesis appears to be that as yet Man has not, in the relatively brief period of his civilised existence, been able to adapt himself to the environmental changes which have been forced upon him. The stress and worry of modern times has upset the endocrine balance, the change in ways of living and ways of eating have not been met by any organic evolutionary adaptive modification in his anatomical and physiological make-up, and pathological results have ensued. Dental caries, he points out, is one of the most prevalent and obvious examples of this maladaption.

One of the most important conclusions he draws is that dental men must be capable of seizing the stick at its right extremity. They must be more familiar with general medical conditions and their probable relationship, direct or indirect, to local affections.

We might reply to this argument that, while it does take a long time, if it happens at all, for the organism to adapt itself to its environment, Man in particular has shown a peculiar aptitude for adapting his environment to his own needs. Hence the problem in *not* insurmountable, and its solution lies in the initiative of those individuals who have sufficient technical knowledge to diagnose the maladjustments of Man to Nature to take steps in their resolution.

Obviously, if it were possible to prevent the origin of dental disease, in proportion as means to this end were adopted the need for dental conservation would diminish.

But, under a social system such as ours, which is characterised by inherent maldistribution of wealth and which is burdened by a chronic residue of over two million " dole receivers " and

several millions more living below the poverty line, the matter is not so simple. Measures of reform are as various as they are hopelessly inadequate. The economic structure determines that the production and distribution of foodstuffs and other necessities of life are carried on only under conditions which prove profitable to the individuals concerned in these activities. The community at large is fed and clothed under these conditions, and no other.

The most notable example of comprehensive planning for the national extension of dentistry and oral hygiene, as part of the Public Health service, was that proposed by the interim Report on "Future Provision of Medical and Allied Services" made to the Ministry of Health by a Consultative Council on Medical and Allied Services in May, 1920.

It proposed a wide extension of the school dental service, and insisted on the provision of meals for children attending the Public Elementary Schools. The latter suggestion was partly carried out by certain local authorities under powers granted to them by Sections 82-85 of the Education Act, 1921.

It is important to observe that the measures taken at schools and the Infant Welfare centres, Women's Institutes and elsewhere have had beneficial results, and that the provision of milk and cod-liver oil, as auxiliary nutriment, does a lot to restore vitamin deficiencies. The L.C.C. School Medical Officer's Report on the "Health of the Schoolchild" reports favourably on the value of the school dental service. Yet all of this is the most miserable patchwork, the flimsiest shadow of what dental prophylaxis could and should be.

Local education authorities in many instances employ whole-time dental officers, and it is not uncommon for these unfortunate men to be made responsible for up to 10,000 children in one year, and 60-85 per cent. of these requiring some conservative treatment. Naturally there is not much time for them to inquire into the special conditions of each individual case.

Throughout Russia there is springing into existence a vast network of medical centres and prophylactic institutions representing the beginnings of a health service such as the world has never seen before. Sir Arthur Newsholme, an ex-Chief M.O.H. in this country, who conducted an investigation into the medical service in the U.S.S.R., writes in his book, "Red Medicine," that a socialised and centrally-organised State medical service has many advantages over the system of private practice, and that in the matter of prophylactic treatment the rest of the world has already a great deal to learn from Russia's bold experiments.

When dentists lose their old prejudices and take their place in a new and more rational scheme of living, our profession will transcend its humble origins and merge into an all-embracing health service, really competent to discharge its functions.

At such a time, gentlemen, dentistry as we know it will mercifully have disappeared.

Correspondence

The Sir Alfred Fripp Memorial Fellowship in Child Psychology

To the Editor of the GAZETTE

SIR,—Your readers will be interested to hear of the development of the Sir Alfred Fripp Memorial Fellowship scheme. The Fellowship was founded in 1932 in memory of the late Sir Alfred Fripp, and Dr. C. H. Rogerson was appointed as the first Fellow. During his tenure of the Fellowship Dr. Rogerson published papers on "Congenital Auditory Imperception" and "The Role of Psychotherapy in the Treatment of Asthma-Eczema-Prurigo Complexes in Children."

As a direct result of his work as Sir Alfred Fripp Memorial Fellow, Dr. Rogerson has been appointed to a Rockefeller Travelling Fellowship and is at the present time acting as House Officer to the Henry Phipps Psychiatric Clinic at the Johns Hopkins Hospital, Baltimore. The founders of the Sir Alfred Fripp Memorial Fellowship are, therefore, to be congratulated on the success of the Fellowship, which promises to fulfil amply the objects for which it was founded.

The Board of Electors have appointed Dr. R. A. Q. Lay to be the Sir Alfred Fripp Memorial Fellow for the ensuing two years.

Yours, etc.,

T. B. JOHNSTON,

Hon. Sec., Board of Electors for the Sir Alfred Fripp Memorial Fellowship.

Guy's Hospital,
S.E.1.

Reviews

The Carbohydrates. By E. F. and K. F. ARMSTRONG. Published by Messrs. Longmans, Green & Co., Ltd. Fifth Edition. Pp. vii+252, including Index. *Price* 15*s.*

ALTHOUGH this is rightly described as the fifth edition of the original "The Simple Carbohydrates and Glucosides," the advances in our knowledge of the chemistry of the carbohydrates since 1910 and particularly during the last ten years make it an essentially new work. It is a recognised standard text-book on that large group of organic compounds which includes the monosaccharides of simple sugars such as glucose and fructose and the polysaccharides, starch and cellulose. Between these two there is the intermediate class to which the convenient name of oligosaccharides is now assigned, and which is subdivided into the disaccharides such as sucrose and lactose, trisaccharides such as raffinose, and the tetrasaccharides.

For the organic and bio-chemist the book is invaluable; it contains a complete bibliography and an excellent index. The book is written critically and contains here and there statements which may be open to criticism. Even so, on all grounds the book is highly recommended.

Although written largely from a biochemical standpoint, the authors have purposely excluded carbohydrate metabolism and even fermentation from the subject matter. Fermentation is dealt with in a separate monograph of the same series, and it would be useful if, at an early date, this series of monographs could contain one on carbohydrate metabolism written by a recognised authority of the subject. The series already contains Cathcart's "Physiology of Protein Metabolism." One important feature of the present work is a short but very well written account of the relationships between carbohydrates and immunology. There is no other book in English which can be so highly recommended to the biochemist as a treatise on the simple and complex carbohydrates as this.

C. S. G.

Sport

Rugby

Guy's v. Old Merchant Taylors

AT Teddington, on Saturday, January 5th, Guy's continued their run of success when they defeated the Old Boys by the narrow margin of one point—the Hospital scoring a dropped goal, a penalty goal and 3 tries (16 points) to a placed goal, a penalty goal and a try (15 points).

It was a splendid game, with the result hanging in the balance until the last minute. Towards the end, when Guy's were leading by six points, the Hospital lost the services of A. R. Clarke, who had been outstanding in the open, and from then onwards the Old Boys redoubled their efforts and, with only a minute to go for no-side, they registered a try which Spragge converted. This increased the excitement, and the closing stages saw Guy's on the attack, when Alexander, Darke and Wright, after excellent passing, ended a game of many thrills.

With R. C. S. Dick fit again, Guy's reorganised their back division and tried the experiment of playing Steytler at full-back and Giesen at stand-off half.

Hopkins, the Hospital hooker, was again in excellent form and, in spite of the fact that Guy's had the lighter pack, he managed to secure possession in the set scrums. However, W. D. Heck, the opposing scrum half, was continually on the alert to frustrate the excellent service which Stanyon-Jaques sent out from the base of the scrum.

Giesen's kicking was magnificent throughout, and time after time he placed his side on the offensive by some accurate kicks to touch.

At full-back Steytler was splendid and gave his side plenty of confidence by his first-rate tackling and fielding of the ball in difficult situations. On one occasion he saved a certain try by one of his timely tackles and cleared with ease.

The Old Boys were the first to open the scoring after both sides had attacked in turn. Heck was mainly responsible for this effort, when he deceived the Hospital wingers on the blind side of the scrum and sent Harvey in too far out for Edmonds to convert. A quarter of an hour later

Giesen, who had almost worked his way through, received a pass from a scrum and calmly dropped a goal.

Guy's now pressed strongly, and Hale-Monro sent Alexander away, who, when near the full-back, passed to de Gregory, but he was kept out just on the line. From the scrum which followed Stanyon-Jaques found a gap and was over the line in a flash, but Guy's failed to add the goal points.

A little later Wilkins led a desperate forward raid, and the Hospital were penalised for not playing the ball, and Spragge kicked a goal. Just before half-time Turnbull side-stepped two Hospital defenders and, as he arrived at the 25 line, kicked across to Bywater, who passed to Huskisson.

The latter appeared certain to score, but Steytler brought off an exceptionally good tackle and crashed him a yard from the line.

Soon after the interval Guy's went further ahead when Kark kicked a fine penalty goal from the touch line, but the old Boys soon drew level when Heck caught the defence on the wrong foot and, after a dazzling run, passed to Turnbull, who was tackled. A scrum followed, and the ball was sent quickly to Bywater who took steady aim before dropping a neat goal to make the scores level.

The Alexander-Wright combination next came into prominence, and after Giesen had just failed to find touch, Wright gathered and was over the line for an unconverted try. Before one had time to realise what had happened, Alexander was again through and, in the mêlée which led to the scoring of a try, A. R. Clarke damaged his ankle so badly that it is doubtful whether he will be fit for several weeks.

From now onwards the Old Boys pressed heavily and, after Guy's had touched down, Spragge, following some loose play on the Hospital line, forced his way over and touched down for a try behind the posts, which he converted.

With the score 16—15 the home side went all out to snatch a victory, but Guy's held out, and in the last minute Alexander and Wright were nearly over again.

Team.—J. van A. Steytler; C. G. Wright, R. C. S. Dick, P. C. Alexander, R. M. de Gregory; J. E. Giesen (Capt.), K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, C. S. Darke, E. R. Davies, G. J. van der Merwe, T. A. Hale-Monro, A. R. Clarke, R. O. Yerbury.

Association

Guy's v. Old Malvernians

GUY'S were not at full strength when opposing the Old Malvernians at Honor Oak Park on Saturday, December 1st, but, nevertheless, won by 5 goals to 2.

During the early stages play was fairly even, each side taking the offensive in turn. However, after 25 minutes the Old Malvernians scored their first goal. Soon afterwards the Hospital equalized through Jones-Lewis, and, a few minutes later, L. James scored a goal which was disallowed as he was offside. The Old Malvernians went ahead shortly afterwards when the Guy's goalkeeper was caught unawares. After this setback the Hospital pressed hard, and G. James equalised just before half-time.

During this game the Hospital swung the ball about more than usual, and a marked improvement was the result.

After half-time the Hospital had much the better of the game and were pressing almost continually. G. James scored again after 15 minutes, to put Guy's ahead. Midway through this half Harvey headed into the net after a shot by Dorr. The play very rarely took place in the Guy's half during the later stages of the game, and the Old Malvernians' goalkeeper and backs had plenty of work to do. Ten minutes from the end Jones-Lewis headed a goal when he ran into the centre to meet a pass from the right wing.

Result.—Won, 5—2.

Team.—A. N. Marley; R. C. Jackson, H. B. Hutton; G. W. Dorr, D. A. Priestley, H. A. Lee; G. James, R. H. Harries, R. W. Harvey, L. James, H. Jones-Lewis.

Hospital Information, etc.

Notices

Guy's Hospital Dental Society

The 36th Annual Dinner of the Guy's Hospital Dental Society will be held on Saturday, March 2nd, at 7 for 7.30 p.m. at the May Fair Hotel. (Entrance in Berkeley Street, Piccadilly; nearest station, Green Park.)

A Clinical Meeting, consisting of a Morning and Afternoon Session, will be held in the Dental Department on the same day, to which all past and present students are invited. Demonstrations will be given by members of the Staff, and cases of clinical interest will be shown. The Morning Session will commence at 10.30 a.m. and the Afternoon Session at 2.30 p.m.

No applications for tickets can be considered after Friday, February 22nd.

Combined Courses in Advanced Anatomy and Physiology suitable for Candidates for the Primary Fellowship Examination

Arrangements have been made to hold combined courses in Advanced Anatomy and Physiology in common with St. Bartholomew's Hospital Medical College and St. Thomas's Hospital Medical School. In order to restrict the size of the classes to manageable proportions, only students and post-graduates of the Schools concerned will be admitted.

The courses will commence on February 1st, 1935, and will meet during the months of February, March and May. The classes will meet on Mondays, Wednesdays and Fridays—Physiology, 12 to 1, and Anatomy 2—3 and 3—4.

During February the classes will be held at Guy's and will be conducted by Professor Johnston (Embryology and General Morphology) and by Mr. W. R. Spurrell (Respiration, Renal Excretion and Ductless Glands).

During March, the classes will be held at St. Bartholomew's (on the same days and at the same hours) and will be conducted by Professor Woollard (Anatomy of the Nervous System) and Professor Hartridge (nervous System, Special Senses and Circulation).

During May the classes will be held at St. Thomas's Hospital Medical School (on the same days and at the same hours) and will be conducted by Professor Appleton (The Locomotor Apparatus) and by Professor Mellanby (Digestion, Metabolism and Enzymes).

In addition, special classes on the Anatomy of the Viscera and Blood Vessels and on Histology will be held for Guy's men only, on days and at hours to be arranged later.

Guy's men who desire to attend the combined courses are asked to give in their names at the Medical School Office as soon as possible.

T. B. JOHNSTON,
Dean.

Pass List

UNIVERSITY OF LONDON.
FIRST EXAMINATION FOR MEDICAL DEGREES.
December, 1934.

O. H. E. Baelz
P. H. Beales
A. D. Bell
A. Bloom
G. C. Bough
A. R. Bradley
G. H. D. Channing
*A. J. Drew
R. H. Evans
P. Greenstreet
D. A. Hamilton
C. W. Kesson
A. H. Knight
O. G. Lane
D. H. Meldrum
R. P. Mills
R. G. Robinson
C. J. St. Cin
L. G. Scott
M. A. Shellim
R. Tilley
E. H. Williams
W. J. T. Howard
J. A. Jones
J. N. Williams
J. K. Wood

*Awarded a mark of distinction in Physics (including Mechanics).

UNIVERSITY OF LONDON.
M.D. EXAMINATION.
December, 1934.

BRANCH I.
Medicine.
H. G. McGregor
W. R. C. Spicer

BRANCH II.
Pathology.
S. J. M. de Nevasquez.

SOCIETY OF APOTHECARIES OF LONDON.

J. E. Darlow passed in Surgery, Medicine, Forensic Medicine and Midwifery, and has now completed the Examination.

Materia Medica and Pharmacy.
E. R. Brown.

Anatomy.
J. D. B. Perkins.

Physiology.
L. E. Milton
J. D. B. Perkins
F. L. D. Young

Papers by Guy's Men

H. T. Binns. Report on two cases of unusual sequelæ of extraction. *Brit. Dent. Jour.*, 1935, lviii, 21.

H. C. Cameron. Streptococcal adenitis and glandular fever in children. *Clin. Jour.*, 1935, lxiv, 3.

T. Izod Bennett. Prognosis in nephritis. *Lancet*, 1935, i, 41.

Geoffrey Marshall. Conditions simulating pulmonary tuberculosis. *Practitioner*, 1935, cxxxiv, 62.

Sir Francis Shipway. Vinethene. *Lancet*, 1935, i, 82; also *Brit. Med. Jour.*, 1935, i, 70.

W. W. Payne and H. S. Shukry. The clearance test in children. *Arch. Dis. Childhood*, 1934, ix, 335.

Appointment

Norman Burgess, M.D., M.R.C.P., Hon. Dermatologist, Royal Albert Dock Hospital, London.

Birth

STEVENSON.—On January 3rd, 1935, at 20, Devonshire Place, W.1, to Frances (née Yorke), wife of F. Harwood Stevenson—a son (Quentine Yorke).

Marriage

CORFE—FIGGINS.—On November 3rd, 1934, at St. Michael's Church, Melksham, Felix Norman Corfe, M.R.C.S., L.R.C.P., L.D.S. (Eng.), eldest son of Mr. and Mrs. Corfe, Muswell Hill, to Joyce Dulcie Prudence, younger daughter of Engineer-Captain J. W. Figgins, O.B.E., R.N., and Mrs. Figgins, Sampford Place, Melksham.

Death

MARSH.—On January 13th, 1935, Mr. A. Palk Marsh, 149, Whiteladies' Road, Bristol.

Eds. { D. P. K.
P. W. C.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

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PASSIM

IN our first number of the present year we commented on the fact that during the last financial year the Hospital's income exceeded its expenditure by several thousand pounds, and we expressed the view that this was a good omen for the future, and so we hope it is. However, at the present moment, owing to the huge financial liabilities which have accumulated in the past, the Hospital is passing through what may be called a financial crisis, which, indeed, is so serious that there have been rumours of a necessity to reduce the number of beds. If ever such a suggestion is put into effect it will be a veritable catastrophe, for it would mean that when many of the other great London hospitals were putting in hand stupendous schemes for rebuilding or expansion, we alone were taking a regressive step, which would be regarded by many as the first one towards our becoming a second-rate teaching hospital.

In order to attract the best students and teachers we must keep abreast of the other big hospitals in the number of beds for teaching purposes, in our equipment, and in our efficiency of treating the sick. Efficiency is often used as an excuse for abruptness and rudeness where it is not required, but in the management of a hospital efficiency denotes smooth running, comfort of the patients, and easy linkage with other branches of the country's medical service. We feel that in considering the comforts of the patients one very necessary change at the moment is that of increasing the number of porters and of having a second porters' Lodge in the Medical Block. There have been a number of complaints over recent months about the delay in transferring patients from one department of the Hospital to another for treatment, but nowhere is this delay more disgraceful than in the transfer of patients to and fro between the medical wards and the X-Ray Department. It is by no means an exception for patients to hang about in the ante-room of the X-Ray Department for 1½—2 hours before being taken back to the wards, and it is not at all surprising that they complain. This question is one that has been under discussion by those who deal with such things, but, as far as we can make out, their only contribution so far has been to add to the delay and increase the work of the Sisters by making the porters get chits of paper signed so as to keep a check on their rate of progress from one place to another. The data derived from this scheme will no doubt be exceedingly interesting, but probably quite valueless owing to the absence of synchronism between watches.

The question of the linkage between the Hospital and other branches of the medical service is very satisfactory in most respects, and it is perfectly astounding how often Miss Addiscott and the other Lady Almoners manage to get patients sent to the myriads of convalescent homes and other County Council institutions, and thereby keep the wards here reserved for the really seriously ill patients. This fact alone must account for some of the increase in the cost of treating patients during recent years, for it stands to reason that the fewer beds which are filled by cases merely requiring prolonged rest or awaiting death, the more beds there will be filled by cases requiring intensive treatment and investigation. But there is a weak link, and that is between the general practitioner and the take-in house officers. We are glad that this matter is being investigated, for

it is a very urgent one. We sympathise very considerably with the busy G.P. who has to spend fifteen minutes while the take-in H.P. or H.S. is found and dragged from the bowels of the Hospital to the College 'phone, and then is told that all the beds are full, and we do not blame him for sending some of his best cases direct to the L.C.C. hospitals without bothering to ring through here first.

We are told that there are always beds vacant, and we cannot question the truth of this statement, but the amount of extra work entailed to get permission to use the beds in out of the way parts of the Hospital or to use beds on the Surgical side for Medical cases renders this knowledge rather worthless, owing to the fact that the H.P.'s or H.S.'s day is, like everybody else's, only 24 hours long. We are not sure where the solution of the difficulty lies, although we suppose the easiest way out of the difficulty would be to create the post of an R.M.O. who would have charge of all the available take-in beds in the Hospital. There is something to say for such an arrangement, which, as a matter of fact, would bring us into line with most of the other big hospitals, but there are many practical difficulties in the way and, in addition, it would mean a break with the tradition of the take-in system as we now understand it.

WE were delighted to receive a letter from a member of the staff following up our remarks on the Osteopaths' Bill, and we very much appreciate the interest he has taken in the question. He relies on the common sense of the House of Commons to sound the death-knell of the Bill, and even of osteopathy itself. We, unfortunately, have less faith in the House of Commons than he has, but we sincerely hope that he is right.

ON February 7th, at the Richmond Athletic Ground, we are playing our first match in the Hospital Rugger knock-outs. We are playing against Bart.'s, and if we manage to win through that we will play the winners of St. Mary's *v.* Middlesex. We were very glad to see the wonderful form our team showed against Gloucester last week, and our hopes of winning back the Cup are very high. Whatever may be the result of the game next week, we wish the rugger side the best of luck.

WE would like to remind our readers that we are always very glad to consider material for publication, and that anything they may care to send will be treated absolutely confidentially and will be published anonymously if desired. We are very short of light material at the moment, and yet we feel sure there must be a considerable amount of latent talent amongst members of the Hospital.

WE wish to express our deepest sympathy to Dr. and Mrs. Dryland on the death of their only son, John Dryland. We feel sure that those who knew him, and especially the Hockey Club, will agree with us when we say that he was "one of the best," and in his death the Hospital has suffered a great loss.

OUR congratulations are due to the following on their appointments :—

Clinicals—

G. T. Balean.
R. W. Cope.
J. R. Forbes.
J. E. Giesen.
M. R. Kark.
W. N. Mann.

House Physicians—

To Dr. Poulton—R. A. Andrews.
To Dr. Ryle—H. Cameron.

House Surgeons—

To Mr. Davies-Colley—J. F. A. Forster.
To Mr. Slesinger—W. H. Hamilton.

Ophthalmic House Surgeon—

C. J. F. Blumenthal.

Obstetric Residents—

To Mr. Chapple—J. E. Darlow.

Out-Patient Officers—

P. C. Alexander.
A. M. G. Campbell.
H. A. Hamilton.
C. G. Pantin.

Assistant House Surgeons—

To Mr. Ogilvie—C. A. Boucher.
To Mr. Doherty—J. R. Dickinson.
To Mr. Grant Massie—F. I. Evans.
To Mr. Eckhoff—D. A. Davies.

House Surgeon in the Ear, Nose and Throat Dept.—

To Mr. Layton—L. N. Trethowan.

House Surgeon in the Genito-Urinary and Orthopædic Department—

R. S. Ellis Brown.

Nervous Breakdown

A Clinical Lecture delivered at Guy's Hospital on 17th December, 1934, by C. P. Symonds, Esq., M.D.

GENTLEMEN,—One of the illnesses which you will have to deal with often in practice is that which is called by the layman a nervous breakdown. The term is not a bad one in the sense in which it is generally used—that is, to cover an illness, or episode of disease, which is mental rather than bodily. Physiologically speaking, and assuming that the brain is the organ of mind, we may regard such disease as representing disorder or breakdown at the highest level of nervous function.

In medicine our first step in the classification of nervous breakdown is to distinguish between those disorders of function which can be correlated with a known physical cause (such as cerebral tumour or toxic delirium), and those for which (at present) no physical correlate can be found. This last kind of disorder is commonly spoken as of functional in contrast with that in which an organic basis can be demonstrated. It is of the functional nervous breakdown that I wish to speak to-day, and especially of a variety which truly represents an episode in the life of the patient, standing out against a background of average health.

SYMPTOMS

Among the varied symptoms of this illness the most constant is a disturbance of mood or feeling. It is not always, however, the most obvious symptom, being often imperfectly realised or inadequately described by the patient.

The symptoms may take various forms, of which the commonest is a morbid feeling of *depression*—morbid because it is out of proportion to the facts of the patient's life. This may be recognised by the sufferer, who will say, " I feel so depressed, doctor, I don't know what to do—and there is no reason for it. I have a good husband, a good home, there is nothing really to worry me." Or it may be referred to particular but inadequate causes. With it are often associated ideas of remorse or self-reproach.

Together with the depression there is often a morbid feeling of *fear*—which, again, may be free or attached. The patient may say, " I have a dreadful feeling of foreboding, as if something awful is going to happen," or he may experience an exaggerated feeling of fear in relation to ordinary difficulties, or particular situations. Both depression and fear may be attached to the other symptoms of the illness, which will be described, so that the patient feels he must have cancer or syphilis, or is afraid that his brain is giving way, or that he will drop dead with heart disease. Together with these positive feelings there is a negative complaint. There is absence of the normal feeling of happiness in relation to work, play and people, and of pleasure in food, drink or tobacco. Loss of sexual feeling is a frequent symptom. In the intellectual sphere the common complaints are of slowness, difficulty in concentration, indecision, and a sense of mental fatigue; with these there is often a sense of unreality—" as if I am living in a dream." The patient is self-absorbed and often recognises and complains of his inability to think of anything except himself. Bodily symptoms are, as a rule, present in great variety, and may cloak the true nature of the illness. Most constant, perhaps, is a sense of being very easily fatigued, often associated with pains in the back and limbs. Headache is common—described usually in terms of continuous discomfort, pressure or numbness. Flatulent dyspepsia, constipation, a furred tongue and palpitation, are other common symptoms. Sleep is, as a rule, disturbed. The kind of insomnia varies with the mood. If fear is in the ascendant, the patient has difficulty in getting off to sleep and wakes often; the depressed patient, as a rule, gets off to sleep easily, but wakes early in a state of great depression and restlessness.

There is very often to be observed a fluctuation of the symptoms in the course of the day. As a rule the morbid feelings are at their worst in the morning. Towards the evening the patient may feel almost himself.

These are the bare outlines of the illness. It is subject to many variations, which depend mainly upon two factors, first, the degree or depth of the morbid feeling; second, the personality and character of the individual. These two factors are to some extent interdependent. If the morbid feeling is of extreme degree the patient's whole self is overwhelmed by it. He has no other mind. Thus, with depression, there is conviction of ruin or guilt, certainty of cancer or syphilis, and these and other ideas may be elaborated in various directions. The mind overwhelmed with fear is filled with ideas such as that " the police are coming to take me away," " my children are going to be killed." Or when, as sometimes happens, the negative symptoms predominate, the patient is totally apathetic and indifferent to his surroundings. Patients suffering from this degree of the illness constitute a social as well as a medical

problem. They have to be cared for with many nurses, or committed, under certificate of insanity, to an institution. But if the degree of morbid feeling is less, if the patient's mind is not completely saturated with the illness, we see him in terms of that which remains of his normal mind reacting to the disease, making the best—or worst—of it, as he is able. One man will accept it as something to be endured, another will throw up the sponge easily, others may be resentful, querulous or cowed according to their disposition and training.

So far we have been looking at the illness as it were in cross section. The longitudinal view shows it as a rule to have a gradual or sub-acute onset, a subsequent development by degrees to its maximum, a prolonged course, and a gradual recovery. Its duration is usually to be measured in months rather than weeks, though there are exceptions. It may last several years, yet end in complete recovery, and, on the other hand, attacks may occur lasting only a week or two. Taking a longer perspective still, we note a marked liability to recurrence in an individual who has once had an illness of this kind—often with an interval of many years average health. In some instances the attack may be preceded or followed by a degree of overactivity and exaltation which is in itself pathological, or a phase of this kind may occur without relation to one of anxiety or depression.

BACKGROUND

When the facts are carefully ascertained, the most significant feature in the background of the illness is a history of similar illness in other members of the family. This is frequently concealed—deliberately or from ignorance. A severe degree of the illness may be represented by a story of suicide for which some supposedly adequate cause is given. Milder attacks may be hidden behind such labels as anæmia, tired heart, threatened tubercle, intestinal stasis, focal sepsis, retroverted uterus, and a host of others. When full information is available a positive family history is obtainable in some 75 per cent. of cases. On the whole, the degree of the illness tends to be the same in affected members of one family. The mental type of the individual affected may be of several kinds. Between the attacks he is most commonly found to be of a worrying, timid and pessimistic disposition; on the other hand he may be a jovial, dominant and rather overactive person—"the life and soul of the party"; or he may alternate between the one extreme and the other—"either down in the depths or up in the clouds"; or again he may be of a "normal" disposition. In his family there will be found, besides normal individuals, persons of the three other types, who, nevertheless, never have an actual breakdown. A first attack of the illness rarely occurs before puberty. After this it may occur at any age. It is especially common in women about the menopause, and in either sex at this, the involutional period of life, the illness may last indefinitely without recovery.

ÆTIOLOGY

The family history supplies the main factor in ætiology. There is a constitutional liability to the illness. Individual attacks may be precipitated by emotional stress, excessive fatigue (mental or physical), insomnia (*e.g.*, from pain), or intoxication (*e.g.*, bacterial—influenza, chemical—alcohol). But in 90 per cent. of cases no physical cause is to be discovered by the physician nor any emotional cause by the patient.

These are the main facts of the illness I am considering. Some of you who are already acquainted with these subjects will, I suspect, have been thinking that I am talking of insane people and neurotic people as if they were suffering from the same illness. "Where," you may be asking, "is that fundamental distinction between psycho-neurosis and psychosis?" My answer is that the distinction between a psychoneurotic and a psychotic form of this illness is *not*, to my mind, fundamental. It is quite an arbitrary distinction which is of some practical value from the social and medico-legal point of view, but that is all. There is certainly a difference between the man who in his depression thinks without reason that he may have cancer and the man who is certain that he has it. But it is a difference only of degree. There is a difference of degree, too, between the state of the man who wishes he might be killed in an accident, the man who would like to take his life but is restrained by thought for his family, and the man who actually does take his life. It is a very important difference practically, but of no importance scientifically—that is, in relation to the nature and causation of the illness we are discussing. It is the fashion nowadays to call the mild cases of this illness by such terms as psychoneurotic depression or anxiety neurosis, and at some point or another to draw a line separating these from the severe cases, which are called psychotic, manic-depressive, or melancholic. The distinction is usually held to imply that the two groups are of different nature and causation. In this sense I believe it to be wrong.

TREATMENT

1. *Radical.*—There is within our knowledge no short cut to cure in this disease. This statement,

I think, would be generally admitted as true of the severer degrees of the illness. Concerning its applicability to the milder cases there would be less unanimity. That there have always been claimants for the ability to cure this illness is, perhaps, not surprising. The first step is a scientific or pseudo-scientific hypothesis. Weir Mitchell, for instance, assumed that the cause of the illness was exhaustion and undernutrition of the nervous system. The next step is an appropriate plan of treatment. The Weir Mitchell treatment comprised rest in bed, isolation and a superabundance of milk. Next comes the result —the patient gets well. The difficulty of assessing the value of any such theory or form of treatment arises from the fact that these patients almost always do get well. It is essential that the results obtained should be critically compared with those observed in patients treated by some other method, or not treated at all. Anyone who is unable to submit himself to such a method of control can easily obtain the conviction that he has found the hoped-for radical cure.

After Weir Mitchell the exponents of intestinal stasis, and then of focal sepsis, have had their day (not to mention endocrinologists and osteopaths). But a new impetus and direction of treatment came with the work of Freud and his disciples. These patients, they argued, deny an adequate cause for their depression or anxiety, and they are presumably honest, *but* their mental disease has its causes which really do exist in the unconscious mind. If, by means of a special method of psychological analysis you explore the depths of the unconscious, you will discover repressed emotional longings and conflicts which are at the root of the trouble. By doing so you will enable the patient to bring his conflicts into consciousness, make a more satisfactory emotional adjustment, and recover. Here was a theory which promised well. It has been applied long enough for some appraisement to be made. Speaking as one who welcomed the theory, and worked hard at it, I believe that it has failed, and that, although the brilliant and laborious work of Freud has been of help in the interpretation of symptoms, it has not proved of any value in advancing our knowledge of the cause of this kind of mental illness, or of its cure. Patients treated by the analytic method do not get well any more quickly than those treated by other methods, nor are they any more free from the liability to recurrence. It is true that persevering and energetic inquiry will discover skeletons in the patient's mental cupboard, but I believe this to be equally true of all persons, whether suffering from the illness or not. On the whole, I think that analytic treatment has done more harm than good, in that it has inflicted a good deal of unnecessary mental discomfort upon patients already miserable with their illness.

2. *Symptomatic.*—If we assume that there is no short cut to cure in this illness our objects will be to ensure that recovery occurs in the least possible time, with the least possible loss of efficiency and with a minimum of suffering. There is a great deal that might be said upon this subject. I shall attempt only a summary, omitting all reference to the degree of the illness which requires nursing or institutional care.

Let me emphasise to begin with that there is one fatal complication which should never be forgotten, and that is suicide. There is never any harm in discussing this subject with the patient. It is the strong, silent type of person who is most likely to take his life and the least likely to talk about it. But it is not by any means true to say that the patient who talks of taking his life never does so.

The first principle in the treatment of a nervous breakdown of this kind is to tell the patient that he is suffering from a genuine illness of a kind that is not less real to the physician than an attack of typhoid fever. Anxiety and depression, loss of mental and physical vigour, insomnia, headache and anorexia are as much symptoms of the illness as cough is a symptom of bronchitis. It is an illness that may attack the godly as well as the sinner, the strong as well as the weak. It has nothing to do with insanity. It will get well. The illness must be given a name—neurasthenia is not a bad title, but has been much abused. Nervous depression is an alternative. Nervous breakdown is non-committal and often suffices.

The next step is to assess the degree of the illness and the resources of the patient. In the case of a mild attack seen in the earliest stage, a complete and restful change for a week or ten days, with adequate hypnotics, is worth trying. No promise should be given of its success. If it fails, then I think one should get the patient to continue with the normal rhythm and routine of his life as far as possible. In the case of a man keep him at his work if you can, watching his ability to carry the load, and lightening it for him whenever necessary. The best guide here is the feeling of the patient, but in order to gauge this aright one must have, or acquire, an intimate knowledge of his personality. One man complains easily, another may go on to the point of suicidal despair without saying much about it. The former needs to be pushed, the latter spared. Sleep is another important guide. Increasing insomnia is an indication for lightening the burden. The ways of lightening it are many. A half-day off in the

middle of the week may sometimes be obtained. A warm bath at the end of the day's work followed by an hour's rest on the bed is useful. The best manner of spending the week-ends will vary a good deal with individual patients. Those who complain of physical fatigue should spend a proportion of the time in bed and avoid strenuous exercise. There are others in whom the incapacity for physical effort is less, who may be encouraged to spend their time at whatever hobby or sport is likely to give them a sense of achievement. The question of social engagements and responsibilities is a difficult one. Many patients who are mildly depressed are able to forget themselves in the right company, but have a sense of strain and self-consciousness in the presence of others, especially those whose attitude they think will be critical.

The patient should be encouraged to talk to his doctor of any worries or troubles with which he is pre-occupied, and to accept advice and help in the management of current problems, but no analytic treatment should be pursued of a kind which will make him feel at fault or responsible for his illness. Some near relative, husband, wife, parent or friend, should be interviewed, informed of the nature of the illness and enlisted as an ally. These patients need, and deserve, understanding and sympathy, though they may often need encouragement and persuasion as well.

The problem of psycho-therapy is how to help the patient utilise all that is best and available of personality and character in the effort to endure and combat the illness. Faith of some kind or another in something outside himself is the greatest asset. Religious faith, faith in the doctor, faith in himself, faith in the particular treatment he is having—all have their value. Nearly all these patients are better for some kind of physical treatment, be it medicine, heliotherapy or massage, provided this treatment is regarded by the patient as a means to the desired end and not as an immeditae cure. Changes in the form of physical treatment are obviously necessary from time to time. I believe that, though it may not be the exact truth, the assurance from the doctor, "I will get you well," is of greater value to the patient than the simple statement, "You will get well."

The treatment of insomnia is usually an important point. These patients need sleep and must have a certain minimum. I do not propose to enter the field of the battle of the barbiturates here, but am content to say that in my experience they are the most valuable medicines we have at our disposal for the treatment of insomnia in this kind of illness. Medinal is, I think, the most useful, and a dose of 5 or 7½ grains given nightly may enable a patient to continue at work throughout a long illness of this kind without coming to any harm. I have rarely seen a case in which, when the illness was over, the patient needed or desired to continue with the drug. The doctor, of course, must decide when it is desirable to cut down and finally withdraw it.

Of medicines, the old-fashioned mixture of bromide and strychnine is, I am sure, valuable. A half-grain tablet of luminal carried in the waistcoat pocket as a remedy against intense waves of restless depression may have a physical as well as a psychological value.

Of diet, there is not much to be said. Patients with this illness are apt to bolt their food, and the diet, therefore, should be of an easily assimilable kind. Alcohol as a refuge from depression is a danger; as an aid to digestion, useful.

Restlessness is apt to lead to excessive smoking, which should be checked.

Constipation is a common symptom of the illness, and I believe it is one of the few illnesses during which a regular mild laxative may be necessary.

Sexual intercourse should be practised sparingly, but need not be avoided. This may be a point upon which advice may be needed. When sexual appetite, as often, is diminished or lost, the attempt is harmful, a fact of which both partners should be made aware.

In the stage of recovery there will often be phases of a day or two at a time when the patient feels well. It is unwise to suppose him recovered until he has remained well for a fortnight. Then it will, as a rule, be safe to let him return to his normal level of mental and bodily activity.

The problem of treatment becomes much more difficult in the case of a man who is too ill to continue at his work, or a woman unable to carry on her household duties. Here I believe the woman of the poorer classes is more fortunately situated; she has got to go on, she does go on, and having to go on helps her to get through the illness. For those who can afford it, the old-fashioned sea voyage is still a sound plan, though its suicidal opportunities must be considered. Lesser changes of environment are of value. If a patient of this kind goes away, there should be a doctor at the other end forewarned of the nature of the illness and the line of treatment adopted.

3. *Preventive.*—It is true of the illness we are discussing, as it is true of other maladies that have their roots in heredity—for instance, asthma and migraine—that the liability to attacks cannot be removed, but when the liability is recognised something may be done in the way of preventive treatment.

In dealing with a patient with a family history of this disease, I should be more than ordinarily careful that, in his childhood, he should learn to endure pain both physical and mental. I should be on the look-out in the phases of puberty and adolescence for any evidence of mental depression or pre-occupation. If he came to me at this age with physical symptoms of a functional type, I should not be content with simple reassurance, but should invite his confidence with regard to sexual worries, particularly the problem of masturbation. So many boys are overburdened at this age with unnecessary fears. They believe that they are alone in their failure, that they have committed the unforgivable sin, that they are candidates for consumption or insanity. So much can be done for them by a frank exposition of the subject. If it had seemed to me that a person of such inheritance showed evidence of the liability during adolescence, I should look to the possibility or probability of further attacks. If I were asked my advice as to his choice of career I should advise one well within his compass rather than at its limit. I should advise for his health that he be encouraged, if necessary pressed, into social contacts, and into the acquisition of hobbies of the kind that engage a man's interests beyond himself. In the matter of his marriage doubtless he would refuse guidance were it offered, but the saving of a man or woman with the depressive liability is often the choice of the right partner. I should be disposed, if I knew him to be passing through a time of particular domestic or business worry, to inquire after his sleep, and to prescribe a hypnotic and a holiday, if need be. In the case of a woman I should watch the menopause with care, being ready on occasion to give similar prescription and advice.

On the physical side I should be prepared for the fact that a depressive illness may be precipitated by fatigue, infection, intoxication, or simple insomnia from physical pain or mental stress, and in women not uncommonly by childbirth. Through a confusion of symptoms with causes, the importance of fatigue as a cause of this kind of illness has been much exaggerated in the past, but I have seen a good many cases in which a succession of late nights from work or play or both combined, or extreme and unwonted physical fatigue have seemed to initiate an attack. I believe it to be a sound rule that the person with the depressive liability should obtain a regular eight hours in bed, and should not submit himself to the strain of two late nights in succession.

I have seen many attacks follow such simple infections as influenza. The potential sufferer from this illness needs double the convalescence necessary for the ordinary person. I have also seen the illness develop on several occasions after a comparatively simple operation, *e.g.*, for appendicitis or hæmorrhoids, when I believe that a more liberal use of morphia or medinal during the post-operative week might have prevented it. What I have said of the need of extra convalescence after illness applies with equal importance to the puerperium.

Another particular risk to which the depressive is liable is addiction to alcohol. There is a not unnatural tendency in the person accustomed to its stimulating effects to have recourse to it at times when energy and optimism are at a low ebb, and there is no doubt, apart from the danger of a habit, that alcoholic excess may precipitate an attack.

Impressions of Leningrad and Moscow during the Summer Vacation

By S. Davidson, Esq.

THE CHILD IN SOVIET RUSSIA

THE emphasis in Soviet Medicine is laid not so much on the cure of illness as upon its prevention. It is thus not surprising that the crêches or State nurseries play a most important part in reducing the rate of infant mortality. From the very beginning the crêche has been much more than a mere day nursery. It is regarded as the place in which the workers of the future are to receive both their training and their health. In this it has amply justified the hopes of its sponsors. Just how well it has done this can be seen from these figures: In 1913, out of every 1,000 children born 275 died before reaching their first year. Each year after the Revolution the infant mortality decreased till in 1930 it was 141 per 1,000 children born. In 1929 almost 65 per cent. of the town children between the ages of two months and seven years came under the direct care of the Crêche Medical Service. There were only 14 crêches in the whole of European Russia in 1914; now (1932) there are over 2,000.*

What happens to a child in a crêche? I visited one of the largest crêches in Leningrad. I saw

the child given to the nurse and at once taken into an enclosed cubicle. It is wrapped in a clean sheet, bathed and weighed. If the child shows any evidence of contagious disease on examination it is not allowed out of this cubicle, but is sent immediately to a children's hospital. If the child only shows an abnormal temperature or of digestive trouble, it is isolated and kept in the crêche until it recovers. Any of the children suffering from an infectious or contagious disease, however mild, is not permitted access to the crêche and not readmitted until approval is obtained from the doctor. During my visit a child was brought in which showed evidence of being verminous. The mother and child were sent home. A message was sent off to her factory notifying the fact, and this was enough to forbid her to come back to work until her house had been properly cleaned and fumigated. The doctor gave me to understand that the child would not be readmitted until a health visitor had expressed herself satisfied that the home had been cleaned. These rules are rigidly applied.

In the office of the chief doctor is kept a complete medical record of each child. To this a brief note of the child's general condition, temperature and mental as well as physical progress is added each day. Before the child is allowed into the crêche a Wassermann test and vaccination is given. But they do not even stop at ascertaining the health of the child alone, for a detailed account of the medical history of the mother and birth of the child is obtained, as well as full particulars of the home environment.

For the purpose of the education of the child, as well as for research purposes, the children are divided into three groups according to age. Each group (ranging between two months to seven years) is dressed differently, and has a different daily curriculum, which takes account of their age and development. All crêche curriculums are based in the first place on the interpretation medicine gives of children's physiological functions. Every six months a conference is held in which new methods of child treatment are discussed, and firstly the frequency of medical examination, how often and when washing, eating, sleeping and excretion ought to take place are determined. The remainder of the time is allotted to work and play. It goes without saying that only expert child psychologists are allowed to teach children. As the primary function of the crêche is to insure the future health of the community, not only normal children are cared for, but children suffering from any social or physical disabilities (*e.g.*, backward children, T.B. children, etc.) are placed in special crêches.

Then, of course, there are the children's hospitals. These are new and huge buildings with every modern apparatus. There a high degree of specialisation has taken place, and it is a rule that no children should be treated by persons not specially qualified to do so. For example, each doctor treating children must have taken a special course in child psychology. The total expenditure of the Institute for the Protection of Motherhood and Childhood (which controls all medical services for women and children) in 1927 was 108 million roubles (about £11,000,000), whilst the State and Friendly Societies also spent 110 million roubles in the same year for that purpose. All these benefits are given to each woman and child entirely free of charge

I must not forget to mention the "Breast-Milk Station." This station, organised by the Institute for Protection of Motherhood and Childhood, is the largest of its kind in the world. The Moscow Institute during 1928-29 distributed 5,527 litres of breast milk. In this institution mothers (voluntarily) have their surplus milk taken from them under most careful medical supervision. Each woman before admittance has to undergo several medical as well as bacteriological examinations, including, of course, a Wassermann test. If they are found healthy and their children are also healthy they are allowed to contribute this milk for the benefit of other children without in the slightest harming their own. This department has done noble work in combating diarrhœa amongst infants deprived of their mother's milk.

Human life has a high value in the U.S.S.R., because the best energies of every man, woman and child are needed by the State for the fulfilment of its plans. There is a clear realisation of the fact that, until individual women are relieved as far as possible of the burden of rearing their own children, their personal emancipation is likely to be incomplete. There is widespread recognition of the fact that the production of a child is a service to the community, which is therefore anxious to care for the child and to reduce its mother's hardships to a minimum.

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*All statistics either from—

(*a*) Soviet Russia Year Book (1930), published by George Allen & Unwin, Ltd. (Gollancz & Co.).

(*b*) Health Protection in the U.S.S.R. by Dr. Semascko

The Editor will, at all times, be glad to consider articles or sketches, provided that they are accompanied by the writer's name and address, not necessarily for publication. Authors who desire reprints of their papers should make their own arrangements with the Printers when they return their proofs. All contributions to be addressed to *The Editor*, who does not accept responsibility for the views expressed by contributors

Nursing in Canada and the United States of America

By Dorothy L. Holland and Florence Taylor

HAVING obtained three months' leave of absence,* we consulted the Education Department of the College of Nursing about visiting Canadian and American Hospitals. Before describing some of our experiences we would like to offer our sincere thanks to Miss Parsons, Director of Education of the College of Nursing, Miss Jean Browne, Convenor of the Committee of Exchange of Nurses, Canada, and Miss Claribel Wheeler, National League of Nursing Education, U.S.A., for making the arrangements. We would also like to express our appreciation of the generous hospitality and great kindness extended to us throughout the tour.

We landed at Montreal on September 10th, and it was a great pleasure to see our old friends Miss Flanagan and Miss McKenzie waiting on the quay to greet us. We were soon packed into taxis with radio installed and driven to the Montreal General Hospital.

We spent five weeks in Montreal, dividing our time between the Montreal General and the Royal Victoria Hospitals. Our hostesses, Miss Holt and Miss Hersey, and their staffs, did all they could to make our visit profitable and interesting.

It is only possible to give a very brief description of the hospitals we visited, and to mention the outstanding differences we noted in the nurses' training on the other side.

The Montreal General is one of the oldest and best-known hospitals in Canada, with a capacity of about five hundred beds.

It is situated in a busy part of the city, and cares for many nationalities. Spacious corridors in most of the hospitals enabled the patients to be taken in their beds to different departments. The meals were served in the wards from the "Hot-locks," which were wheeled round.

The Royal Victoria Hospital is most beautifully situated on "the mountain." It consists of several buildings in grey stone, surrounded by beautiful trees, and overlooking McGill University and the city. Although it is only a mountain "by courtesy," we thought the climb to the maternity building could be very steep on occasions!

We were very fortunate to be at the opening of the new Neurological Institute attached to the Royal Victoria Hospital. The building is wonderfully equipped for treatment and research.

While in Montreal we visited the large French hospitals—the historic Hotel Dieu with its memories of Jean Mance, the Notre Dame and the large Mental Hospital, St. Jean de Dieu, where the corridors were so long that little trolley cars ran from one end to the other. If only we could produce a photograph of Sister Augustine and Sister Marie Virginie in their habits, Miss Mills, from the Montreal General, in her dazzling white uniform, and the two Guy's Sisters in blue, sitting in a row in their small store sipping "Canada Dry" through a straw!

We also visited the Children's Memorial Hospital—such a happy crowd of patients, and with a number of original devices for giving various treatments to children. The Shriners' Hospital for Children takes care of orthopœdic cases. The tiny victims of infantile paralysis have a most attractive swimming pool in which to have their treatment. Weeks of patient care gradually brings improvement.

At the Alexandra Hospital for communicable diseases we found a very rigid but simple technique being carried out, with no antiseptics used but soap and water, and fumigation had been out of date for many years.

We spent a very busy afternoon with Miss Upton at the National Registration Office, and with Miss Johns, Editor of the *Canadian Nurse*, and Miss Wilson, Secretary of the Canadian Nurses' Association.

The Post-Graduate School of Nursing attached to McGill University seemed to be very popular. The actual school building is small, and one unconsciously compared it with our College of Nursing, but most of the lectures are given in the University buildings. We spent a very interesting day there with Miss Lindebergh.

The hospitals in Canada seem to have more funds at their disposal to award for post-graduate study.

We visited the headquarters of the Victorian Order of Nursing, the large district nursing service of Canada, and went to some of the homes of the poor patients with social service workers from the hospitals.

We were delighted to visit Ottawa, where we were guests for one night of Miss Bennett, Superintendent of the Ottawa Civic. We were taken through the Parliament Buildings, and saw the beautiful Chamber of Memory and the Canadian Nurses' War Memorial. The autumn colours were at their best at this time. We shall never forget the flaming maples on the Gatineau Mountains.

At Toronto we were guests of Miss Gunn at the Toronto General Hospital. This hospital has a

*At Guy's Hospital the Sisters are eligible for 3 months leave of absence after a period of 7 years.

capacity of 1,100 beds, arranged in several large buildings for general and specialised work, and is attached to the Toronto University. The private pavilion is very luxurious. The entrance hall is like a hotel lounge, and a few other interesting features are the dining-room for patients' visitors, a unique system of signalling and of tray service to the patients.

In most of the private pavilions we visited the patients were required to choose their menu the day before.

We spent a busy day at the Children's Hospital of 300 beds, where student nurses from several general hospitals went for three months for their training in Pediatric Nursing. Toronto also has a School of Nursing. Post-graduate courses have been given since 1920. In 1925 a four-years' general training was instituted—one year the Basic Sciences at the University, two years in a general hospital, one year Public Health. In 1933 the present experimental training was started. The Object of this is to give a comprehensive training in three years under improved conditions. The student nurses obtain their practical experience at the Toronto General, and other special hospitals and departments in the city. They have a supervisor in the wards, and appoint their own lecturers. The Rockefeller Foundation is financing the scheme for five years.

The general training in Canada aims at including communicable diseases, obstetric, pediatric, psychiatric and Public Health work. This necessitates a good deal of change, the nurses seldom remaining in a ward for longer than a month at a time. Most of the final year is spent in the affiliating hospitals, which greatly diminishes their opportunities of taking responsibility. This has to be acquired later as a " floor duty nurse." There is at present a committee working on a standardised curriculum of training for Canada. A report of their work is to be given at the biennial meeting of the Canadian Nurses' Association in 1936.

Ward aids are employed in most of the hospitals. They are invaluable to the head nurse of the ward, being her one stable individual in the ever-changing staff of nurses. She does much of the routine work of the ward, and in some cases serves the meals.

In most of the hospitals we visited, both in Canada and America, classes were admitted only twice in the year, September and February. The cost to the nurse varied from $25 to about $700 (in some cases refunded on graduation). Uniform and books were usually provided after the student had been accepted into the school, but in no hospital in which we stayed did the student nurses receive any remuneration. We understood that this was not the case in all hospitals.

All the lectures were given during the academic year. This meant a very crowded time-table during the winter months, but left the summer free, when most of the holidays were given. Extra graduate nurses were employed to relieve during the holidays.

We said good-bye to Canada with real regret, but feeling that we had acquired much that would prove useful and stimulating.

A month to visit hospitals in the States seemed to us all too short, but Americans, we found, can show a good many highlights in that time !

In Boston we were guests in the Peter Bent Brigham and the Massachusetts General Hospitals, and we also visited the noted Children's Hospital. It was interesting to find that in the Massachusetts General most of the original Bullfinch Building is still being used, and we attended lectures in the Ether Dome where Morton gave his first anæsthetics and where his ether sponge and anæsthetic chair are to be seen. This was the only hospital we visited where male nurse affiliates were received for general training.

Here we met a physician who had visited Guy's a few years ago and liked our cheerful wards with coloured bed curtains, open fire-places and easy chairs for convalescent patients. He was so favourably impressed that Miss Sally Johnson, the Superintendent of Nurses, feared that the whole hospital would have to be remodelled on the lines of Guy's.

From Boston, Miss Carrie Hall, our hostess at the Peter Bent Brigham Hospital, motored us to Cape Cod and Plymouth, where we saw the stone which marks the landing of the Pilgrim Fathers, and north to Marblehead and Salem, interesting parts of New England. After visiting Salem we were certainly able to appreciate the New England type of architecture and the colonnial doorways.

We spent about a week at the Yale University School of Nursing. This year all the students have their Batchlorate, and at the end of a 30-months' course, are awarded a Master's Degree in Nursing. The course includes the same subjects as at other schools and the students are attached to the Newhaven Hospital, but they are truly students and are not required to carry the load of the nursing service of the hospital. Their practical work in the wards is arranged to avoid any unnecessary repetition which may lead to loss of interest and is uneconomical. In this and other hospitals where the nurses in training are essentially students, the load of the ward is carried by graduate nurses (and there are many of them in the hospitals since the depression), assisted by ward orderlies and ward aids.

The University buildings of Yale show a distinct resemblance to the Colleges of Oxford, although many of them are of yellow sandstone. We spent an interesting evening in the Stirling Memorial Library and enjoyed a debate on Trade Unionism, Oxford University *versus* Yale.

From Newhaven we journeyed south to Baltimore, when we stayed at the Johns Hopkins Hospital. This is a very large hospital of over 900 beds, arranged in separate buildings; one of them is the world-famed Phipps Psychiatric Clinic.

At a tea party in the Phipps Clinic we met Mr. Rogerson, of Guy's, who was very enthusiastic about the work out there, although he was envious that we were returning to Guy's in time for Christmas.

In the Teaching Department we saw some Nursing Projects, a popular method for the students to demonstrate nursing procedures, while their colleagues and often medical students formed a critical and appreciative audience. It was interesting to see separate wards for coloured patients and separate clinics in the Out-Patients' Department, and further south, we were told, they still have their own places in the street cars.

We spent a most enjoyable morning in Washington, where we visited the Capitol, the National Cemetery and War Memorial at Arlington and the new Episcopalian Cathedral. We were ready to appreciate a Thanksgiving Dinner before proceeding to New York.

In New York we stayed at the Presbyterian Medical Centre and the new York-Cornell Hospital, both modern buildings, although the foundations of the hospitals are old.

They are huge structures, with all the modern equipment possible. The wards are spacious and contain not more than 16 beds, and each bed is curtained. Side-rooms with one or two beds, and several service rooms and laboratory complete the unit. In the York-Cornell Hospital some wards are staffed entirely by graduates from many different training schools, and a special course is arranged for them. Supervisors, technicians and clerks are also attached to the units.

All the hospitals have pavilions for paying patients, and private nursing homes are unusual.

The Nurses' Residences are well planned on modern lines. There may be 14 floors of bed-sitting-rooms; telephones and kitchenette on each floor; several reception-rooms and sitting-rooms, and generally cafeteria for meals. In many hospitals there is student government, and the two New York hospitals have Social Directors in charge of social activities for graduates and student nurses.

In both Canada and America the requirements of the State Boards vary very considerably in different parts of the country, and hospitals with only 25 beds can be training schools for nurses. The number of hours required is very different from in England—each hour of recitation, laboratory work, as well as lecture time, is recorded.

The work in the wards is arranged so that each student may have varied experience in as many diseases as possible, but to do this she may not look after one patient for more than a few days. Often ward and Out-Patient Department experience are closely correlated, and in the operating rooms and Out-Patient Departments the student is shown every branch of the work.

The nurse has to do a considerable amount of clerical work in connection with ward reports and records. More hours are given to Theory, especially in the sciences allied to nursing, and in many hospitals the classes are arranged during working hours. In most hospitals there is an eight-hour day, extending from 7 a.m. to 7 p.m., and relief nurses are introduced from 3 to 11 p.m. The Presbyterian Hospital uses the Block System. For a period of ten weeks in the first and second year the day is divided into three hours lecture period and five hours in the wards. The unemployment question seems a serious one, but is now slightly improved. Some of the large training schools are only admitting about sixty students in one or two classes a year. Salaries are higher, but so is the cost of living, and there are no pension schemes and no National Health Insurance.

While in New York we visited the Henry Street Visiting Nursing Headquarters, East Harlem Health Centre, Teachers' College, Columbia University, where many post-graduate courses in nursing are given (here we had the privilege of visiting Miss Nutting), and the National Nursing Headquarters in the Rockefeller offices.

We enjoyed New York, and managed to see many things besides hospitals. After several misty days visibility improved, and we had a wonderful view of the Manhattan Island from the 102nd floor of the Empire State Building (as yet the highest building in the world). The skyscrapers are wonderfully proportioned, and looked equally beautiful in the evening mist, or studded with thousands of lights, as we saw them when we left New York harbour on the 7th December.

America is said by the Americans to be "a woman's country." Certainly the houses are comfortable and the kitchens marvels in labour-saving devices. We had heard of the wonderful hospitality on the other side of the water, but we can now speak of it from experience. Our tour was most interesting and stimulating, and we look forward to meeting many of our Canadian and American friends at the next conference of the International Council of Nurses in London.

Correspondence

Bill for Registration of Osteopaths

To the Editor of the GAZETTE

SIR,—There will be few of your readers who do not share your deploration of this Bill. It behoves us, however, to inquire into the reasons for the activity of its noble supporters. There are, of course, the obvious causes, such as the free advertisement by the Press of any miraculous cure, and the complete suppression of failures. The former has always been produced in a patient who has been bungled by many doctors and specialists—no mention, however, being made of the actual status of our *confreres*. The criticism has, in many cases, been justified, for until recently the teaching of Rest and Pain has influenced medical practice to an immoderate degree.

Again, there is the ever-present yearning for the mysterious which is shared by the highest and lowest grades of society. The Mumbo-Jumbo of osteopathy, the supreme self-assurance of its adherents, their readiness to promise cures with no fear of retribution for failure, satisfies the craving for the ritual which was once embodied in the hocus-pocus of the witch doctor.

Thirdly, we must blame the astonishing bias against any treatment savouring of bone-setting which still exists in the minds of many doctors. At a dinner a year ago I was flanked by a surgeon and by a physician of international repute. In the course of conversation I sought their views on manipulative work by the unqualified. They both assured me in all seriousness that the whole thing was blather, and that there was no special art in the manipulation of joints. This, of course, is absurd.

As you point out, osteopaths are not merely bone-setters. Although the founder of the cult, Andrew Still, taught that all diseases were referable to displacements of the vertebræ, the modern osteopath realises that this is gibberish. He preserves, however, the mystical atmosphere by means of his spinal percussions with the same assurance that some of us percuss on the right border of the heart. No harm is done in either case. Our osteopath, nevertheless, applies at the same sitting massage, radiant heat, diathermy and what not, In other words, osteopathy no longer exists, but the name is preserved as a sop to the credulous. A small, but powerful, section of osteopaths is composed of men who have, in fact, a very considerable knowledge of anatomy, physiology and pathology, and its members are capable of " seeing the red light " and shunting the unsuitable and potentially litigious patient to the medical practitioner.

It is appropriate that the Bill in question should have its birth in the House of Lords, for the gullibility of the leisured classes is notorious. Were it not for our verdant peerage one infamous clinic in Germany couldn't exist for a week. Many of them have never been compelled to use what brains they possess, yet they feel qualified to express opinions on any medical subject from contraception to osteopathy with supreme self-assurance. Observe how quickly the trained mind of Lord Hewart appreciated the danger, to which you refer, of allowing an osteopath to sign a death certificate. In the report of that debate (first reading) one could tell at a glance which of the speakers was a peer as the result of effort and which of them had been born great.

Nevertheless, Sir, at this stage it would be a mistake to oppose the Bill wholeheartedly. It will be modified in the House of Commons until it is innocuous, and the registration of the osteopath will exterminate his most valuable asset—pseudo-martyrdom.

Yours, etc.,

A. H. DOUTHWAITE.

Patient Escapes from Ward

(*The following is a letter which one of the Residents received from a patient who managed to escape from his ward immediately prior to an operation.*)

SIR,—You have doubtlessly heard by now of my disgraceful conduct of this evening. I have no excuse at all; I can only say that I am sorry, thank you for your kindness, and explain that my nerve left me at the last minute. I saw one last chance to bolt, and I took it. Nobody is or was to blame but myself. And I sincerely trust that you will see to it that I am the only one to be blamed.

I suppose that I take a grave risk in taking my present course, but I now know beyond all doubt that I would sooner die than face that horror again in cold blood.

Yours very gratefully, and in all sincerity.

Obituary

JOHN STEWART WINTER DRYLAND

JOHN STEWART WINTER DRYLAND, aged 23, the only son of Dr. G. W. and Mrs. Dryland, of Kington, Herefordshire, died on January 13th, 1935, from septicæmia.

John Dryland was just preparing to take the second part of the Second M.B. in March, so that most of his friends were in the Medical School, but all those who were privileged to have his friendship must feel a very deep loss on his passing away. John's consideration and kindly disposition endeared him to everyone with whom he came in contact.

One of his most striking qualities was the tremendous enthusiasm he had for everything he took up. He was an all-round sportsman; hockey and running, however, interested him most at Guy's. It was the former of these at which he excelled. His secretaryship of the Guy's Hockey Club helped to raise it from a position where it could scarcely raise two elevens to its present position of a vastly increased membership and standard of play. Real hard spade-work did it—but that was John all over. His greatest joy would have been to see Guy's win the Cup. He was awarded his full "blue" for hockey, and on two occasions he was a member of the United Hospitals' side.

At the annual sports John was always in the fore. He won the mile championship twice and the three miles once. He represented the Hospital in the Inter-Hospitals' sports. He was an excellent runner, but it was never for self-glory that he aimed, always uppermost in his mind was what Guy's could do as a team.

Sincerity and unselfishness never deserted him. He was the third generation of his family at Guy's, and his mother was a Guy's trained nurse.

John had carried on the family traditions of doing his best for the Hospital. He left this world unspoilt; he left behind an example. What more could any man want?

H.

Sport

Rugby

Guy's v. Birkenhead Park

AT Birkenhead Park on Saturday, January 12th, the home side, after a very indifferent start, wore down the defence of the Hospital and won comfortably by a placed goal and four tries (17 points) to a placed goal (5 points).

The result was disappointing to followers of the Hospital, especially as Guy's had displayed such excellent form in their matches during the past few weeks.

Guy's started off in a most convincing manner; so much so that it appeared that they would win by a substantial margin. Within a few minutes they scored a try, which was converted, but, having survived the shock of this early reverse, the Park took the measure of their opponents and fully deserved their success.

A feature of the game was the magnificent defence set up by the Birkenhead Park back division; they tackled their opponents low and accurately every time, and this proved the undoing of the Hospital—they could make no headway at all against a relentless defence.

Having overcome the shock of a goal against them in the early stages of the game, the Park settled down to play splendid football, and proved that they were the better equipped side all round.

Guy's fell away badly after scoring their opening try, and it is difficult to explain why; it is true the conditions were by no means ideal, but the Park overcame them and were definitely superior in all departments.

Against a strong breeze, Guy's started the game with such determination that the home side were all at sea and concentrated their efforts on keeping the Hospital from crossing their line.

Knowles was in excellent form, and within a few minutes he brought off brilliant saves when Alexander and then Jaques broke through. A little later the same player brought Wright down with a superb low tackle, but gradually the Hospital worked their way into the Park's 25 and Stanyon-Jaques passed to Steytler, who swerved in near the posts for Alexander to convert.

Stung by this reverse, the Park back division showed new life and, after several attempts had been made to get through, Knowles set his side a fine example when he created a magnificent

opening and passed to Morton, who scored in the corner. After this success our left wing could not hold the enthusiasm of Morton and Holden, who scored all the tries between them.

Near the interval the former accepted a long pass and crossed for an unconverted try, which gave the Park a lead of one point.

Early in the second half Birkenhead soon asserted their superiority and, following some short passing between their forwards, Baxter eventually broke through and passed to Morton, who scored another try. A little later a bout of passing left the Hospital standing, and Holden crossed for a try, which Hughes converted.

Encouraged by this success the Park set up another attacking movement, which culminated in Morton scoring his third try, and this proved the final score before no-side was whistled.

Team.—E. C. Sharp; C. G. Wright, P. C. Alexander, J. E. Giesen, R. M. de Gregory; J. van A. Steytler, K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, C. S. Darke, E. R. Davies, G. J. van der Merwe, T. A. Hale-Monro, R. O. Yerbury, P. Fletcher.

Guy's v. Bedford

VISITING Bedford on Saturday, January 19th, Guy's were defeated by 3 goals and 3 tries (24 points) to a goal and a try (8 points).

Without begrudging the success due to the home side, Guy's may be considered unfortunate in losing by such a wide margin of points. The game was by no means as one-sided as the score suggests, and the issue was in doubt until well into the second half, when the Bedford forwards obtained a definite superiority. They were ably supported by their halves, Sime and Power, who, once in an attacking position, never made a mistake.

Guy's fielded the same side which had done duty at Birkenhead, with the exception that T. Fichardt, who had just returned from South Africa, was introduced on the left wing in place of de Gregory.

Both teams started at a terrific pace, with Guy's the more aggressive, and after a forward rush had been checked, Dick started a fine movement which ended in Alexander scoring a splendid try, to which he then added the goal points.

From then onwards the Hospital backs were marked severely, and with the Bedford forwards getting the greater share of the ball in the scrums, the ascendancy passed to the home team, who varied their attack on each occasion they received possession.

A burst by Thevenard carried play to the Hospital line, and from a scrum Sime passed out to Power, who cut in cleverly and scored a try, which Sime converted.

Power was again prominent a few minutes later when he made a lot of ground before punting over the line. Both Frivener and Haynes followed up, and in the race for the touch-down the latter secured the verdict, to give Bedford a lead of three points at half-time.

The opening of the second half saw Guy's attacking strongly; judicious kicking by Giesen placed the Hospital in a favourable position, but offside following a fine kick by Steytler sent them back to midfield.

Even this setback did not deter the Hospital from making desperate efforts to equalise, and a magnificent break-through by Giesen was worthy of a try, but Lyttle brought off a wonderful tackle on the line and prevented what would have been a certain score.

Having recovered from this shock the Bedford forwards transferred play to the other end of the field and, after Steytler had failed to clear a long punt ahead, Rose rushed the ball over for an unconverted try.

Allowing the Hospital little respite, Bedford continued their aggressiveness, and in a short space of time tries were added through Lyttle and Sime, and the last was converted by Eidsforth.

Near the end Sime scored another fine try; receiving the ball near mid-field, he baffled the defence and punted ahead before securing the touch-down.

Guy's rallied and, following persistent pressure, they were awarded a penalty, which Alexander very nearly converted from a difficult angle. However, his efforts were soon rewarded when Dick created an opening and Alexander was through in a flash; after a splendid run he crossed for an excellent try, which was not converted.

It was a bright, open game, full of interest from start to finish.

The new formation of the Hospital back division gave promise of great possibilities, and once they have had one or two games together they should prove a powerful proposition to any club.

Team.—J. van A. Steytler; C. G. Wright, P. C. Alexander, R. C. S. Dick, T. Fichardt; J. E. Giesen (Capt.), K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, C. S. Darke, E. R. Davies, G. J. van der Merwe, T. A. Hale-Monro, P. Fletcher, R. O. Yerbury.

Guy's v. Gloucester

AT Honor Oak Park on Saturday, January 26th, Guy's achieved a splendid performance by defeating the powerful Gloucester side by 3 goals and a try (18 points) to 2 goals (1 penalty) (8 points).

Not only was the victory well merited, but all the scores were achieved by brilliant combined movements on the part of the backs.

In spite of the cold biting wind, the backs handled the ball with amazing accuracy and precision, all their efforts being carried out at top speed.

This was the first occasion that the followers of the Hospital had had an opportunity of judging the merits of the reorganisation , and undoubtedly they must have gone away after the match impressed by the wonderful display they had seen.

Furthermore, a word for the forwards. Against a pack containing four internationals, apart from county forwards, they performed magnificently; in fact, having had a hard battle during the first half, they took the measure of their opponents soon after the interval, and actually had the audacity to take a scrum in preference to a line-out. The introduction of Ziervogel into the second row was a very wise choice, as both he and Davies dove-tailed perfectly with the rest of the pack.

Mr. W. D. Doherty, who had given the side an afternoon's coaching earlier in the week, must have been very satisfied with the efforts of the Hospital forwards, who have undoubtedly come on tremendously since they were last seen at home.

Giesen, the Hospital captain, led his side magnificently, and must on his form in this match be considered well in the running for a cap. The fact that he qualified the day previously must have been a source of inspiration, for he was the outstanding back on the field. He was well supported by every member of the side; the backs were all fast, clever runners, sure with their handling and their understanding of each other was perfect.

At full-back Steytler did exceedingly well, and fully justified the confidence placed in him. He worked tremendously hard, tackled fearlessly against the heavy Gloucester forwards, and, in spite of the tricky wind, kicked with remarkable accuracy and skill.

Guy's kicked off with an advantage of a cross-wind and, having repelled a forward rush, they worked the ball to the visitors' 25. From here Fichardt secured near the touch-line and, dodging his way through a crowd of players, passed inside to Darke, who quickly sent Hale-Monro over for a try, and Alexander, whose kick at goal hit the far upright, just dropped over the bar, made it 5—0.

A penalty against Guy's from a fairly easy position gave Boughton an opportunity, but he failed to gauge the strength of the wind, and Guy's touched down.

Then a magnificent effort by Wright after some sharp passing saw him evade several tackles and, racing up to Boughton, he punted over the full-back's head and, taking the ball in his stride, touched down behind the posts. Unfortunately, the try was disallowed owing to an infringement beforehand.

This was only a forerunner of what was to come, for in the next minute Guy's carried out a delightful bout of passing in which the ball travelled from right to left to Fichardt, who passed inside to Dick, and Fletcher came up to score an unconverted try.

After considerable pressure by the Gloucester forwards, Guy's were penalised for offside, and Boughton scored a magnificent penalty goal; it was perfect judgment on the part of the international, who used the diagonal wind to send the ball sailing plumb between the posts.

Guy's missed two glorious chances of adding to their score before the interval; on each occasion Dick cutting through very cleverly. In the first instance he was clear, with Fletcher inside and Alexander on the other side; when faced by Boughton he passed to the former, who was unlucky to knock on with a clear run in.

On the second occasion he found a gap near midfield and, after giving the dummy twice, he raced through, but, unfortunately, nobody was up to take his pass.

Soon after the interval Guy's went further ahead when, following a scrum in their own half, Wright cut in from the right wing and raced through the centre before passing to Alexander, and, after a top-speed movement between Giesen, Alexander and Wright, Dick and Fichardt carried on the movement, and the latter accepted a final pass from Dick to crown a glorious 70-yard effort by touching down behind the posts, for Alexander to add the goal points.

A little later Guy's were pressed in their 25, and from a scrum the ball was sent back to Stanyon-Jaques, but in trying to clear the ball was blown back over the line and, in the scrummage that followed, Franklin and Wadley were awarded a joint try, which Boughton converted.

Then followed another spectacular try for Guy's which was really first-class. After Ziervogel had made a great save, Giesen created a beautiful opening for Wright, who came across from no-

where and cut through magnificently. A long pass was splendidly taken by Alexander, who was travelling at top speed with Dick alongside. The ball was passed and repassed by Dick and Alexander with such amazing rapidity that the visiting defence was bewildered, and finally the movement ended in Dick scoring a wonderful try behind the posts, which Alexander converted.

Just prior to this movement Alexander had bad luck with a penalty kick which sailed over the bar, but the points were disallowed as one of the Hospital forwards was in front when the kick was taken.

The whole side are to be congratulated on their excellent performance, which augurs well for the Hospital Cup-Ties.

Team.—J. van A. Steytler; C. G. Wright, P. C. Alexander, R. C. S. Dick, T. Fichardt; J. E. Giesen (Capt.), K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, C. S. Darke, E. R. Davies, C. F. Ziervogel, T. A. Hale-Monro, P. Fletcher, R. O. Yerbury.

Hospital Information, etc.

Notice

ADDRESS BY SIR WILLIAM BRAGG, O.M., K.B.E., F.R.S., to the Fourth and Fifth Year Medical Students and Newly-Qualified Medical Practitioners

For the past ten years the Metropolitan Counties Branch of the British Medical Association has arranged during the Winter Session a special address to the fourth and fifth year medical students and to recently qualified medical practitioners. Many of our readers will recall with pleasure the very interesting lecture, with cinematograph demonstration, which was given in March, 1934, by Dr. R. G. Canti.

The next address of this series will be given by Sir William Bragg, O.M., K.B.E., F.R.S., the Director of the Royal Institution of Great Britain, on " Crystalline Structures in the Human Body," with illustrations and practical demonstrations, in the Great Hall of the B.M.A. House, on Tuesday, March 12th, 1935. Tea and coffee at 5 p.m. Address punctually at 5.30 p.m.

Sir William Bragg is Fullerian Professor of Chemistry in the Royal Institution and Director of the Davy-Faraday Research Laboratory in the same Institution. He was President of the British Association in 1928, received (in conjunction with his son) the Nobel Prize in 1915, has held a number of important posts at various Universities in England and the Colonies, and has written extensively on radio-activity, crystal structure, etc. His address on March 12th should therefore be of outstanding interest, and we advise all who are eligible to make a special note of the date and time.

A personal invitation will be sent at an early date to all concerned, and the invitation card must be produced on admission to B.M.A. House. Any fourth or fifth year medical student or recently qualified practitioner who does not receive an invitation by the end of February is invited to write to the Honorary Secretaries, Metropolitan Counties Branch, British Medical Association, Tavistock Square, London, W.C.1.

Pass List

UNIVERSITY OF OXFORD.

December, 1934.

M.B., B.Ch.

Anatomy and Physiology.

S. R. Gloyne — W. E. Young

Materia Medica.

W. F. Dunham — W. W. Gilford

Pathology.

W. W. Gilford.

Forensic Medicine and Public Health.

D. F. G. Moir.

Papers by Guy's Men

John A. Ryle. Prostatic and gastric uræmia. *Lancet*, 1935, i, 198.

R. Jarman. Evipan as an intravenous anæsthetic. *Proc. Roy. Soc. Med.*, 1935, xxviii, 341 (Sect. Anæsthetics).

R. R. Macintosh. Evipan in dental anæsthesia. *Ibid.*, 346 (Sect. Anæsthetics).

C. S. Hallpike. On the function of the tympanic muscles. *Ibid.*, 226 (Sect. Otology).

Changes of Address

H. Maclachlan, 127, Old Lodge Lane, Purley, Surrey. *Purley* 2336.

G. T. Hankey, 100, Harley Street, W.1. *Welbeck* 6343.

Oliver Ive, Dene End, Denewood Road, Highgate, N.6.

C. I. Siggs, Stone Cottage, Frant, Sussex.

St. George B. Delisle Gray, 59, Queen Anne Street, W.1. *Welbeck* 4942.

C. P. Blacker, 28, Weymouth Street, W.1. *Welbeck* 1120.

Harry F. Boosey, 40, Park Square, Leeds, and Hampton House, Ilkley. *Leeds* 24132 and *Ilkley* 151.

Leslie S. Carter, 54, Park Lane, Croydon.

Births

GARNETT.—On December 25th, 1934, at 39, Lee Road, Blackheath, S.E.3, to Muriel (née Evans), wife of A. T. G. Garnett—a son (Roger Ashley Jack).

SUTCLIFFE.—On November 26th, 1934, at 27, Welbeck Street, W.1, to Eileen (née Tuxford), wife of Dr. R. Brook Sutcliffe—a son.

EDS. { D. P. K. / P. W. C.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

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PASSIM

IT is said to be possible with a working knowledge of London's licensing laws to get a drink any hour between 8 p.m. and 8 a.m. It is however, quite impossible, even after years of residence in the College, to know how to be served with a boiled egg at 1 p.m. in the Dining Room. In recent times many of the quainter customs of the Catering Company have been abandoned. We are now no longer treated to the spectacle of residents, in protest against having to pay for grape fruit, throwing a daily plate of sausages out of the window or hoarding buckets of eggs, garnered from the breakfast table, in their rooms.

Of the more striking anomalies that remain one still concerns the grape-fruit. Half of one of these delicacies may be supplied to the take-in dresser; if the other half is needed it must be paid for. The dresser is, however, at liberty to order two or three shillings' worth of sausages and eggs, though all he may want for breakfast is a whole grape-fruit.

The choice of breakfast for those who want it after 11.30 requires considerable experience if the day is not to be started on *creme parmentière* and roast beef. One may, for instance, have coffee, but not toast, unless poached eggs are on it, and then only if spaghetti and poached eggs are on the menu. On Sundays fried eggs may be obtained, but not on fried bread, only on fried potatoes. The dresser on the Surgery on Sunday morning if he lives in College can apparently have no breakfast, as he must appear on the Surgery at 9 o'clock and the doors of the Dining Room remain locked until that hour.

These quaint survivals of the autocratic early days of the Company remain when much improvement in other directions has taken place. So many concessions have been made—singularly, and after great demand—that a generous gesture would be welcomed and an attempt might be made to run the Dining Room along the lines of an ordinary restaurant, and those rules suspended which make the meals of many residents in the College a series of energetic jousts with an inflexible management.

▭

FOR the readers of the *Gazette* who have not seen the Park during the recent changes, in trees and architecture, it may be of interest to know that it has now become possible to obtain some idea of the eventual appearance of Nuffield House. Like the Medical and Massage School blocks, it is to be of red brick with stone facings. Progress has proceeded rapidly since August. Work on the foundations, which extend 22 feet into the ground, is now finished; the completed steel frame-work towers at the south-west end of the Park, and one can hope the worst of the riveting is over.

Contractors for the heating and special flooring have commenced work, and hoardings inform any member of the Hospital who wants one where to buy a lift.

In all, over 60 men are at present engaged on the building, and it should not be long before that end of the Park has again a more decorative boundary than Newcomen Street.

▭

THE striking reduction both in the incidence and the mortality from tuberculosis in all its forms during the last 20 years will always remain as a testament to the tireless efforts of the Ministry of Health and the medical profession to combat this disease, which is such a scourge. The Ministry of Health has tackled the problem from the aspects of living conditions and the prevention of spread of the disease by contact. There is little doubt in the minds of most people that the new Housing Bill to prevent overcrowding will achieve still more in this direction.

The part played by the researches of the medical profession in the treatment of the disease has done an equal amount to prevent the crippling disabilities which are often caused. In the matter of phthisis the introduction of artificial pneumothorax therapy has been a tremendous advance, for by its means it is often possible to rest a diseased lung and at the same time allow a patient to continue with his ordinary work and earn his living. Ten years ago it was customary for many a patient to undergo a long period of restricted activity in a sanatorium, and the treatment of the disease became a very serious economic proposition. It is impossible for the vast majority of patients to leave their jobs for more than a very limited space of time, and it was naturally difficult to get patients to subject themselves to such a course. With the introduction of artificial pneumothorax therapy the period of confinement in a sanatorium is not only shorter, but is very much more successful in its results. The second type of therapy which has been introduced to great effect within recent years is that of gold injections either intravenously or intramuscularly. The indications for such treatment are several, and there are certain risks and dangers, which it is not our purpose to elaborate here. We introduce this subject merely to remind our readers how important a problem this is, how wide a field it covers, and how interesting it is from the point of view of the history of medicine.

Professor Wright on Thursday, February 21st, has chosen as his subject for a lecture to the Physical Society "The Decline of Phthisis Mortality in England," and we feel sure there will be many of our readers who will wish to come and hear his views on the subject.

THE result of the rugger match between ourselves and Bart.'s on Thursday, February 7th, was very disappointing, but we wish to congratulate the team on its splendid efforts and to commiserate with J. E. Giesen on the injury to his knee-joint, which he received during the match. On the same evening the Residents' Going-Off Dinner was held, but the disappointment suffered in the early part of the day seemed to act as a stimulus to the spirit of some of the guests rather than otherwise.

Mr. T. E. Howell has been elected President of the Residents, Mr. F. A. Nicolai Vice-President, and Mr. N. M. Jacoby Treasurer for the next three months. Whenever there is a change in government the hopes of the people to have their wrongs redressed run high, and the Residents suffer from the same illusions.

WE have included in this number an Out-Patients' Attendance List. It differs in a few respects from that published in the *Directory of Guy's Men* and we ask our readers to note the alterations, which have been made.

WE wish to congratulate C. A. Clarke on being made a member of the Royal College of Physicians.

WE would like to remind our dental colleagues that the Dental Society is holding their Dinner on March 2nd at the May Fair Hotel. During the afternoon cases will be demonstrated in the Dental School. Tickets for the Dinner may be obtained by applying to the Secretary of the Dental Society, Guy's Hospital.

Air Embolism

By C. Keith Simpson, M.D.

DURING the last year I have been fortunate enough to encounter in Coroner's mortuaries four cases of death from air embolism, a condition which is uncommon and most unlikely to be seen in the Hospital Post-Mortem Room.

To the student the condition is no more than an *on dit*. He is expected to be aware of the danger of such a catastrophe, especially in surgical practice, but rarely, if ever, has the opportunity of examining a case, for the deaths are sudden and quite unforeseen, usually occur on the operation table during the course of anæsthesia, and are therefore removed to a public mortuary, for the attentions of "an independent pathologist," as deaths under anæsthesia. The only demonstration possible is that of the first undoing, for the materials cannot be preserved in any way. *Suppressio veri suggestio falsi*. The condition does occur; it is not merely a concept of imagination or an exercise in experimental pathology, and deserves some prominence in a quarter open to the student.

Examinations were made upon three cases of death under anæsthesia during the course of which operative incisions had opened large veins, close to the heart in two cases, and at the brim of the pelvis in the third, and upon a fourth case in which a suicidal throat incision, committed, appropriately enough, with a "Cheerio" safety

razor blade, had almost severed a large vein in the neck. All four cases died within a few seconds of incision and showed post-mortem features characteristic of massive air embolism of the right heart and pulmonary capillary bed.

Each case has reminded me of a typically vivid dictum of the late Prof. M. S. Pembrey: "Air? Water? My dear boy, of course they're poisons!" Death has come like a bolt from the blue, a veritable catastrophe.

These four cases showed certain common features in the right side of the heart, the pulmonary aorta and larger branches, and the lung bed. In each case a trail of glistening bubbles of air led from the efferent side of the opening in the vein towards the right side of the heart, shining white through the thin coat of the veins affected, and churned into a fine froth in the right auricle and ventricle. This course covered a striking change in blood colour from deep venous purple at the opening in the vein to a bright crimson in the heart, where the frantic contractions had beaten up the air and blood and rendered oxygen saturation *fait accompli*. The afferent side of the incision into the vein lay collapsed in one case, and oozed a dark fluid venous blood in the other three. Blood and air bubbles had become exuded from the efferent side in one case only. Traced in the other direction, the bright red foam in the right ventricle extended up into the larger divisions of the pulmonary arteries and became lost in the vascular bed of the lung. The lungs were dry, avascular and excessively spongy in consistency, having a light pink colour. There was no dilatation nor any unusual degree of contraction of the right heart, and, apart from a few small bubbles in the orifice of the coronary sinus in two of the cases, no change in the wall was evident. There was nothing to suggest that the death was in any way associated with right-sided heart failure, an explanation which has been proffered by Couty as the cause of death in this condition. These cases add to the opposition to such an idea, and will afford a more acceptable conception, as will be explained later.

The records I have of these cases are as follows:—

In the first, the right axillary vein of a woman of 44 years had been cut in its third part close to the first rib over a length of one quarter of an inch during an operation for the removal of a malignant tumour of the breast and infiltrated axillary glands. Slight bleeding occurred at once as the tissues were under tension by retractors and the walls of the vessel were held open, but the surgeon was remarking that the damage did not appear to be very extensive when, within four or five seconds of the time of incision, the patient suddenly stopped breathing. The pulse was reached for and felt to be thin and rapid, dying away during the counting, and, in spite of stimulative measures, the woman never regained either function. The findings I have described as common to all four cases were found at the post-mortem examination, the trail of bubbles starting at the incised wound in the axillary vein. Death was sudden and not accompanied by cyanosis or fits or any other external manifestation. After the examination had been completed the surgeon remarked that it was clear, in view of what he had seen, why no extensive bleeding had taken place; the escape of blood had been checked by the rapid sucking in of air. No sound of this was heard at the time, as occurred, for instance, in the next case.

In the second case, an unusually large left anterior jugular vein was "nicked" in the first stage of an emergency tracheotomy operation for laryngeal carcinoma with obstruction of the air passage. The patient was an old man of 70 years. A *siffle* sound, "as of air being drawn in," was described to me by the surgeon as following immediately upon incision of the vein. The surrounding tissues were being strongly retracted, and this contributed to holding open the incised hole. The patient collapsed within six or eight seconds of incision, the breathing ceasing suddenly and the pulse being imperceptible at the wrist. A faint heart-beat was distinguished for several further seconds. Resuscitative measures failed. The general condition of the man was not by any means good, of course, before the procedure had been attempted, breathing being very laboured and the heart having undergone considerable dilatation as a result of the strain thrust upon it by prolonged dyspnœa and partial anoxæmia. He died before the trachea had been touched.

The third case presented particularly interesting features, as the vein damaged was lying on the brim of the pelvis. A most important preliminary alteration in posture had, however, been made in order to render the operative procedure more easy; the patient had been inclined to an angle of some 35 to 40 degrees on the operation table in order to keep the pelvis free of loops of small intestine, and the veins on the brim of the pelvis were actually above the right side of the heart; blood was flowing on a down-grade through the wide inferior vena cava to the right auricle. During the course of a sub-total hysterectomy for multiple fibroids in a woman of 44 years who had previously had an appendicectomy operation, a number of adhesions between the enlarged uterus and the posterior wall of the pouch of Douglas had to be divided. As this was being done, deep purple venous blood suddenly welled

up. The area was again under tension, as sponges had been packed around the brim of the pelvis. The source of bleeding was mopped several times in order to see where to place a hæmostatic forceps, and it was remarked that the bleeding was not very severe, so that one need have no fear of having opened an important vein. When the inferior vena cava is opened there is usually little doubt in the mind of the surgeon as to what has happened. Alas, *nimium ne crede colori*, the inferior vena cava had indeed been opened, and once again the rapid entry of air, drawn down into the main stream, had prevented severe bleeding. The woman was dead ten seconds later. Once again, also, respirations appeared to cease first, the apex beat being perceptible for nearly 15 seconds further. The findings in both the second and third cases were identical as far as the heart, pulmonary aorta and lungs were concerned, and have already been described. In the third case, just described, the inferior vena cava was even a little distended in the upper abdomen by frothy air and blood driven back from the right auricle. An opening measuring about 4 mm. lay in the crook of the " bifurcation " of the inferior vena cava, immediately under the right common iliac artery.

The fourth case was one of suicide in a melancholic male of 54 who was under observation in an institution. He had twice before attempted to cut his throat, and bore two scars to mark his periods of " temporary insanity." The male nurse was in an adjoining room when he heard a fall, and, running back to his charge, found him stretched on the floor, dead, with an eight-inch incision of suicidal type across the throat. The safety-razor blade with which the cut had been made lay gripped between the right thumb and forefinger. It was evident that the right external jugular vein had been almost completely severed. As so often happens when the head is thrown back for the attempt, the carotid arteries slip back into the hollow of the roots of the transverse processes and escape injury. I have notes of one case where a butcher almost severed his own head by strong deep cuts fore and aft, yet left the carotid vessels intact. In this melancholic case the amount of blood lost over the face and neck and on the floor was strikingly small. Post-mortem examination made it clear that death was due not to exsanguination, for a trail of bubbles led from the incised vein to the right heart, where the same beaten froth was found. Death had been far too quick and the amount of blood lost far too small. Air embolism of the lung bed was responsible. Unfortunately, the exact time of incision is not known here, only the time of the fall. This may come astonishingly late even when as large a vein as the external jugular is divided. A barber whose body I examined in Lambeth had laid ten razors on his dressing-table for the purpose of committing suicide. His daughter heard a gurgling sound, looked into the room, and fled screaming downstairs to fetch help. Two men ran up to the bedroom, only to be kicked down again in a tumbled heap by the frenzied barber, whose throat was already cut when the girl looked in. " The dog it was that died." One of the would-be helpers preceded the deceased in an ambulance with a Colles' fracture of the wrist. There was but one incision, and the only large vein divided was the right external jugular. A period of nearly five minutes must have elapsed from the time of incision to the time at which the barber fell, overcome by the exertion of resisting help. It is clear that death coming within ten seconds in a case where nothing more than a large vein has been divided is the result of something more than hæmorrhage.

If the mere opening of a vein of some size within easy reach of the right heart were the only necessary proceeding to allow the entry of air in sufficient quantity to cause fatal air embolism, one would justifiably expect air embolism to be a relatively frequent occurrence in surgical practice, but this is by no means the case. The condition is very uncommon. One must be careful to distinguish between real air embolism, with its chain of bubbles and bright crimson beaten froth in the right heart and pulomnary aorta, from post-mortem admixture of gas and air resulting from the entry of aerogenic micro-organisms into the blood-stream from the gastro-intestinal canal, a common enough post-mortem phenomenon, as Welch himself pointed out. The fine saturated froth is absent, and, of course, gas bubbles are present in nearly every organ as well as in the portal, afferent and efferent streams. The failure to do so has resulted in the appearance of many cases of " false " air embolism in the literature, especially in connection with puerperal sepsis.

Stray bubbles of air may also enter the veins and right heart as a result of incautious handling of viscera. Cases should be examined with the greatest of care before disturbing the organs.

True air embolism has, however, been described in association with numerous operative procedures, especially close to the root of the neck, but it has also been described with operations upon the sinuses of the skull and the veins of the forearm, as well as with lavage of the uterus after recent birth, and with criminal abortion. What appear to be of far greater importance than the actual

nearness of the vein to the right heart are the large size of the vessel and the presence of an opening which is preserved either by tension or anatomical situation. These conditions hold in each of the four cases described; even the suicide had the head thrown back and the tissues stretched on either side of the gaping wound. It is clear, too, that laboured inspiratory movement will increase the tendency to aspirate towards the right heart; this was particularly striking in the tracheotomy case. A fourth factor exists in the mechanical forces assisting flow at the site of incision. The right heart was in each of these four cases below the wound, and gravity was assisting the rapidity of flow into the afferent side of the wound. One can picture the bulky column of blood in the inferior vena cava sucking in air as it dropped away from the top of the column, in spite of the continuous flow along both common iliac veins, in the pelvic case; the body was inclined head downwards at some 35-40 degrees.

The volume of a fatal dose of air delivered intravenously is the next matter into which we should inquire. Animal experiment shows that large quantities of air can be injected intravenously without ill effect, *provided that the period over which injection is made is one of some length.* Laborde and Muron injected into the external jugular vein of a dog 1,120 cc. of air over a period of an hour and a half without causing death, and Jurgenson has injected into the left femoral artery of a dog weighing 43.5 kilo. 3,550 cc. in the space of two and a half hours without inconvenience. Rapid injection is, however, immediately fatal in most laboratory animals; some, like the dog, appear less susceptible, but the introduction of as little as 50 cc. of air is usually rapidly fatal. The horse is of greater bulk and can take larger quantities.

These, however, are no *ex cathedra* arguments for man. One of Prof. Nicholson's most frequently quoted aphorisms reads: "We pathologists can dispense largely with experiments since Nature has done them for us on a grander scale than is possible for the boldest experimentalist. We have unbounded opportunities for studying the effect on the body of every conceivable alteration of the environment." It is possible that in man the susceptibility is greater, though exaggerated ideas as to the minimum size of a fatal dose occur in many writings. The figures vary between 5 and 50 cc., and it is clear that this errs on the safe side; I have seen a laboratory assistant inject, without intent, 8 cubic centimetres of air into a fellow assistant's basilic vein and nothing more than a transient dyspnœa and acceleration of the pulse result.

There can be no question that the pulmonary bed is infinitely more suited to the filtering off of large quantities of air than, for instance, the brain or the kidneys, to the accompaniment of little inconvenience.

Very small quantities of air on the left side of the heart are much more dangerous, since they may become impacted within a second or two in small end-arteries supplying most vital districts of brain instead of being flung into a vast expanse of pulmonary bed. Many examples of such catastrophes appear in the literature. When I was acting House Physician to Dr. Hurst I was called urgently to Addison to see a man who had suddenly collapsed whilst having an empyema irrigated. He came round within ten minutes, but had a typical "crossed paralysis," which died away during the following 18 hours. He almost certainly had had an air embolism, a small quantity having been introduced into a tributary of the pulmonary veins in the wall of his empyema sac and conveyed to the brain via the left side of the heart.

Very much larger quantities must, however, be necessary on the right side and in the pulmonary bed to precipitate death. You may have read a well known novelist's ingenious method of committing murder by the injection of air by her villain into the arm-veins of the victim. The post-mortem findings can hardly have been negative. In the four cases described the amount of air which had entered into the afferent circulation, filled the right heart, and distended the pulmonary aorta and bed of the lung must have been well in the neighbourhood of 200 cc. on each occasion. Something in the neighbourhood of 110-120 cc. would be necessary to fill the right auricle and ventricle alone; the froth was largely air.

We can, then, accept that in these cases the following factors had operated together:—

(*a*) An incision, into—
(*b*) a large vein, held open by—
(*c*) retraction of the surrounding tissues.
(*d*) Proximity on an inclining grade to the right heart.
(*e*) The introduction of a large quantity of air, probably over 200 cc.—
(*f*) with great rapidity.

It must also be remembered that in three of these cases death occurred whilst the subject was depressed by the effects of anæsthesia. This may appreciably shorten the time necessary to precipitate death.

Death is produced according to Couty by the dilatation and failure of a right heart which is beating ineffectually to express a frothy blood, the

process being difficult because of the "compressibility" of this mixture. This was not evident in any of the four cases. The right heart was neither dilated nor contracted, although the left was firmly contracted. There was no real evidence of right-sided heart failure. Frothy blood had, indeed, been propelled into the pulmonary aorta and capillary bed of the lung to such effect as to give the whole lung a dry, pink, and excessively spongy appearance.

According to Passet death is precipitated by embolism of the capillary bed of the lung by air bubbles, and Rolleston adds that the extension of air into the mouth of the coronary sinus must add considerably to the discomforture of the muscular wall of the right heart. Bubbles of air were found in two of the cases lying in the mouth of this vessel, but it is difficult to conceive of this as more than a very trivial factor. Frothy blood is also forced back into the venæ cavæ, as was evident in the pelvic case, but the lung bed is full of air, the pulmonary aorta is full of frothy blood, and it is almost certain that this welling back into the veins leading into the right auricle is a terminal mechanical feature. Air does not reach the left side unless the septa in the heart are defective, and this was not so. Perhaps it would be more correct to say that air may only reach the left side of the heart in microscopical quantity when the septa are intact, for we know that in a very closely similar condition, that of fat embolism, small blobules may find their way to the brain and kidney through the fine capillary seive of the lung.

It is unfortunate that the demonstration of air in the lung bed by the microscope is not possible, as is, for instance, the demonstration of fat emboli. In a case which I examined several months ago where death had occurred unexpectedly on the operation table shortly after the manipulation for re-setting of a fractured right femur, it was evident on microscopical examination that almost all, if not the entire capillary bed of the lung was embolised by minute fat globules, and, in addition, certain of the arterioles supplying groups of capillaries. The period of survival after manipulation was very much longer than a few seconds, but the entry of fat into the circulation must have been a considerably slower process. If the conditions in the lung are the same in air embolism, the left heart may be expected rapidly to empty the vascular bed of the lung, contract down in beating on less and less blood, and so suddenly reduce the pressure of supply to the medulla that respiratory and circulatory failure are precipitated. The period seems excessively short, but, as I have pointed out in the three cases where the lapse of time was recorded as being so short, the subject was fully anæsthetised.

As in most circumstances it is probable that all three explanations—(1) failure of the right heart, beating frantically to express an excessively elastic froth, (2) obstruction of the venous flow in the coronary sinus, and (3) massive air embolism, with its succession of complications on the arterial side—have effect together.

Multiple Personality

A Paper read before Guy's Hospital Physical Society by W. N. Mann, Esq.

MR. CHAIRMAN and GENTLEMEN,—Cases of multiple personality are so rare that from the point of view of their recognition and treatment they are of no importance. They are of importance, however, from a theoretical standpoint, since their existence and the method by which they originate throw considerable light on normal psychic processes, and perhaps may give us some means of understanding a little of the anatomy of the mind. Further, the much commoner conditions of fugue and hysteria, in which there is some degree of dissociation of the mental processes, are, perhaps, only less dramatic forms of the same condition, and thus in studying multiple personality we can gain a further insight into these less rare states.

I presume that to ask for an anatomical formulation on the basis of all function must here be considered a heresy. But the further science progresses, the more apparent does it become that a knowledge of the structure of things must precede investigation of their functions and the disorders to which they are liable. It is evident in the recent developments of physiology, where enormous stress is laid on the biochemical changes involved, that a sure basis for reasoning can only be laid on more minute and on more exact data of the sizes and shapes and arrangements of things which ultimately constitute living matter. After all, the function of an organism is nothing more than a change in its structural form as a result of spatial and temporal changes in the shape of its environment.

It is, perhaps, surprising, therefore, that in the great mass of speculative psychology that has recently been thrust on a sceptical world, there is

apparently so little effort made to reach some definite conclusion about what I may describe as the "anatomy of the mind." Science, we are told, is the "acquisition of facts . . . united with and controlled by the imagination."[1] Psychological teaching seems so much imagination and so little an acquisition of the facts. Of course one must remember that from the time of Aristotle till the end of the last century there had been no advance at all in the explanation of psychic phenomenon. And when an interest was turned to this subject, it was too late to share in that burst of thought which attempted to explain natural phenomena along deterministic and "rationalistic" lines. Instead, the renaissance of psychology, as it were, took place at a time when physiology was leaving its firm, if often erroneous, anatomical foundations for the sands of speculation about function. And it is only in very recent times that the tide has turned back again.

Thus in psychology, when an author makes some attempt to define a basis for psychic activity, it is only to invent specious analogies to an infinitely vague conception that the particular writer has. And further, this picture must, indeed, fit in with the preconceived notions of the theoriser. One decides what one is going to find, and finds it without too much difficulty among that strange conglomeration of material which constitutes psychic phenomena. Thus in Freud's last book[2] you can appreciate the struggle between his scientific honesty and a deep affection for his theory. And, of course, the theory wins. Always we are put off by spurious and attractive pictures that bear no relation to reality. Thus some would have us believe that the mind consists of two rooms; one is flooded with light and the other dark. And between the two is an ante-room with a guard posted at the door. And the thoughts in the illuminated room are always noble, while in the darkened room are all the desires of the second circle of hell—"a place void of all light which bellows like the sea in tempest."[3] And in this shameful spot the psycho-analyst gropes for the electric-light switch. For all I know this may be some picture of the mind. But it is not comparable to, say, Mercator's projection of the world, in which one not only knows how true the projection is, but also one has at least some idea of what this thing is—the world—that is being projected. That is, there is the idea of a real thing behind. But in the Freudian model there is no substantial "idea" behind it all. Thus, though it may explain functional disorder up to a point, it describes how, perhaps, the thing is working; not what the thing is.

By now you will be wondering what all this is about and where, if ever, multiple personality comes in. I have tried to show that a real idea of the mind can only be built up from the things we know, and only so far as we have facts from which to reason. Well, in multiple personality we have a psycho-pathological condition which is well defined, and of which the morbid anatomy can be studied in a purely objective way. And perhaps, by studying it, we shall obtain some more evidence in building up our idea, which may have at least an element of the truth in it.

Multiple personality is a sort of Jekyll and Hyde affair. One body is used, as it were, by two persons or more, who show varied emotions and psychic activities. And they may be divided into two classes: those in which there is complete amnesia by the active personality for the behaviour of the inactive one, and those in which the two personalities live side by side, one or the other being periodically dominant, although still influenced to a greater or less degree by the inactive one. To the former class is given the title of "alternating personalities"; to the latter of "co-conscious personalities." The former type would only seem to be a more complete form of the latter, one in which the "splitting-up" process has gone on a stage further. In other words, it is a question of degree alone.

The cases which I wish to put before you as a basis for subsequent discussion are taken from McDougall,[4] who gives excellent summaries of the better known cases. And the two in particular which I have selected for description are those of Maria and of Sally.

Maria was educated as a young girl in a convent school where there were Spanish pupils. Both at school and in her rather Puritanical home she was subjected to rigid sex-taboos. As a compensation for this she indulged during adolescence in romantic phantasies to a pathological degree. And further, these ideas were strengthened by an altogether idealistic fascination for a man of Spanish origin. Outwardly, at any rate, she appeared normal until the age of twenty, when, owing to the sudden death of her father in somewhat tragic circumstances, she suffered a severe emotional shock. The result of this was that for the next six years she indulged in certain fugue-like activities which were beyond the volition of, and which greatly puzzled Maria when she was in her normal state.

Thus she would suddenly leap from bed and perform weird dances of extravagant character. Or she would suddenly burst into automatic song. At the end of six years these occasional fantastic appearances gradually fused into a definite personality which asserted itself as a real person with no knowledge of the existence of Maria at all.

This second personality, whom we shall call B, alternated with the personality A, which was almost that of the normal Maria, but lacking in those things which were essentials in the make-up of B. But whereas B had complete amnesia for A, A knew of and could be influenced by B, much to her bewilderment.

Maria, or rather A, was timid, submissive, religious, and apparently lacking in any sexual activity. On the other hand, B claimed to be a Spanish gipsy girl of a somewhat romantic upbringing and early life. She emphasised her part by speaking bad Spanish, and English always with a foreign accent. She was egoistical and very self-assertive.

When A was dominant, B—the gipsy girl—was present in a subconscious state and could influence A's—or Maria's—activities up to a point. In addition, since they both shared the same sensory apparatus, they would both gain memories when their common body was, for example, reading a book. On the other hand, their selection of ideas would differ according to their personal tastes, so that A would remember those points that appealed to her, and B those that she liked best. Thus the associations of memory as a result of a stimulus would be different according as A or B was in charge of the physical organism at the moment. And then the activity resulting from that stimulus would differ likewise.

But although the Spanish personality could make A do what was repulsive to A, but which fitted in with the desires of B, B acted as a person quite separate from A, of whom she, indeed, knew nothing.

Thus it would seem that the Spanish-gipsy personality was made up of all the repressed desires of Maria and largely built upon the procreative instinct. As a result of her strict upbringing Maria had perforce to thrust all her romantic ideas from her conscious activities. In some way an emotional shock—the death of her father, who, it must be remembered, was largely responsible for the repression—released the repressions *en bloc*, to produce this fantastic foreign creature who believed herself a voluptuous beauty, and who would break into strange dances and Spanish song. Therefore the factors producing this odd state of affairs one can compare to those producing a psycho-neurosis in a mind less fragile.

The second case is very similar up to a point, but it is complicated by the introduction of a puckish and delightful individual entirely out of the blue, and Sally by name. This is Dr. Morton Prince's famous Beauchamp case.

The original personality we will call B. B was an impressionable child much given to day-dreaming. You will observe that this was a prominent activity also in Maria's younger days. She led a stormy and unhappy childhood accompanied by much emotional trauma. This culminated in her running away from home at the age of sixteen.

At eighteen she had become a hospital nurse. At this time, too, she formed a romantic and idealised attachment to a young man, who one day approached her in what is described as "an unexpected manner in somewhat dramatic circumstances." The report rather naively continues: "One might fairly infer from the account given that G——, the young man, kissed her." However, she received a severe emotional shock.

She, B, remained in an agitated frame of mind and, during the next few days, underwent a striking change of character, until a new personality emerged whom we shall call B_1.

B_1, it seems, consisted of B less certain characteristics. In passing, I would compare this to an hysterical paralysis. B_1, then, was patient, altruistic, self-effacing, tolerant, and of a religious nature. She did not indulge in bodily activity much, and was easily tired. The other characteristics which had supplemented these characteristics to make up the original B remained completely submerged, and, gaining in potential from complete repression, became the nucleus of a new personality altogether.

Six years after the first shock which had transformed B to B_1, B_1 had another shock, also connected with the same young man. Dr. Prince was sent for owing to the agitation of the patient, and, in his presence, another person, B_2, emerged. B_2 was just the reverse of B_1. She was bodily active, self-assertive, easily angered and intolerant. In fact, B—the original Miss Beauchamp—seemed to be the exact sum of B_1 plus B_2. Now B_2 had complete amnesia for the time during which B_1 had been dominant. That is, she took up her life from the age of 18, when Miss Beauchamp had her first shock, the intervening six years being quite blank. She had, however, among her memories the life of B prior to that date. These earlier memories she took on as her own, but had different feelings towards them, *i.e.*, her retrospective life up to the age of eighteen was similar to the historical life of Miss Beauchamp, but not identical with it, since she gave events a value determined by the character of B_2.

For a year B_1 and B_2 alternated, with reciprocal amnesia for each other's activities. In fact, these two constituted a pure case of alternating personality.

After that period, by means of deep hypnosis and suggestion, B_1 and B_2 were combined until the original B re-emerged—a complete person. The re-synthesis, however, was not a stable one, and for some years B, B_1 and B_2 appeared at different times. B_1 and B_2 were still mutually amnesic, as they were also for the existence of B, but B commanded the memories of both B_1 and B_2 —indeed, they were part of her.

All this is fairly straightforward and is exactly comparable with the Maria case. However, the interesting complication, and one which makes this particular patient unique, was the appearance of Sally.

Sally was an impish person who first made her existence known towards the end of the second period of Miss Beauchamp's life. That is just before the second shock, and when B_1 was in command of the physical organism.

She appeared while B_1 was under hypnosis, but was not in any way the normal hypnotic condition of B_1, which bore the same relation of the hypnotic to the normal personality as in a normal person.

Sally was a sort of Peter Pan. She showed no tendency to attain any sort of maturity during the six years of her manifest existence, and was in many ways childish. Thus she liked elaborate practical jokes.

At first Sally only came to life, as it were, under Dr. Prince's hypnosis, but after a time the change over from B_1 and B_2 to Sally would occur in the ordinary non-hypnotic state.

And now for Sally's claims—and these are important as well as interesting.

During Sally's periods of dominance she had, of course, command of the physical organism. One curious clinical abnormality was present, however, and that was complete cutaneous anæsthesia and deficient muscle sense. Our knowledge of her is largely due to the fact that she was thoughtful enough to write her own biography.

She claimed to have lived a separate co-conscious existence since the time when Miss Beauchamp first walked. Using the Beauchamp brain she was able to come into contact with the outside world. But having her own character, she would take an interest only in things that she enjoyed. Her memory content, therefore, although it depended on Miss Beauchamp's activities, depended also on Sally's own selection. Thus, if Miss Beauchamp read a book that interested Sally, Sally would read it, too; but if Miss Beauchamp read French, a thing she often did, but regrettably a language Sally did not understand at all, then Sally would occupy herself with her own thoughts. Again, Sally would play elaborate practical jokes on B, like undoing her knitting and winding the wool over the furniture in the room.

Sally lasted in this state for six years, until B_1 and B_2, having been synthesised into the integral Miss Beauchamp, or B; Miss Beauchamp and Dr. Morton Prince combined to suppress Sally. At this time Sally, indeed, used to complain during her conscious moments that she was being "squeezed." And squeezed she was, as her appearances in command of the organism became less and less frequent, until at last she was suppressed altogether. And so much for Sally.

I have described this case in some detail since the elucidation of the problem of Sally is one, I think, which throws considerable light on the structure of the personality, quite apart from the interest of the case.

Now any theory of personality which we might make must allow for such morbid phenomena occurring, given the lesion in a set place. In other words, we must be able to create such a condition, at least in the imagination, by postulating a morbid state in some part of our scheme.

Now it is evident, whatever this elusive thing the personality is, that at least it must be built up from the primitive instincts, influenced by the environment. Haldane would maintain, I think, that the personality is a function of the organism plus the environment which are indissolubly one.[5] I think it more reasonable, however, to regard the environment as something external which is always moulding and directing the structure built up on the instincts.

The primitive instincts range in number from one up to several hundred, according to the taste of the psychologist who is discussing them; at least, that is my impression. At any rate, let us postulate one about which there seems little doubt —that of self-preservation, with its corresponding emotion of fear, and its physical expression of flight, etc. A savage in the jungle or a 20th century Western European alike experience fear on being faced with a wild beast, and their first desire is to escape. We have here something common to all peoples and all ages, uninfluenced by education of any sort, although the final physical expression of the emotion may be altered by certain social necessities—such as that of the showing of bravery, etc.

The reaction to the stimulation of a primitive instinct is laid down in the individual from his inception, and is as unalterable in its inheritance as the germ-plasm. It is an inherited reflex which, on the whole, is advantageous to the individual himself and/or to his race—in the case

we are considering, to secure his continued existence.

Now on this fundamental basis of primitive instincts and emotions, with their inherited simple reflexes is built the superstructure of the mind with all its activities. It is evident that much of this is consequent on environment. The primitive reflexes become modified on the connative or active side, and a great mass of conditioned reflexes is built up on this simple basis. What is not present at birth must be the result of the environment acting on what was. That aphorism seems, perhaps, patently obvious, but its corollary that life is nothing more than a mass of reflexes if we are endowed with nothing more than the primitive instincts at birth, is important. This because if we can show that man does not always act reflexly, then it follows that he inherits more than the instincts—and this I hope to show subsequently.

Pavlov[6] has shown with an elaborate techinque what everyone really knew before—that life is at least very largely built up of these reflexes ; that often when we think we choose we are really considering the alternatives in the light of our remembered past experiences, and our final choice depends not upon our vital selves (whatever they are), as we would prefer to think, but on the peculiar environmental variations to which we have been subjected in the past. How very near the truth this is, to say the least, the most superficial consideration of our everyday life is adequate. But is it the whole truth ? Is the whole of our personality just a pattern of reflexes which will always produce a specific result given a certain stimulus ; are our ideas just patterns—engrams, if you like the term—in the mind produced by stimuli in the past ? Do we think just in grooves worked out like tram-lines by a previous succession of happenings ? Have certain pathways in our nervous system been " facilitated "—I believe that is the physiological expression—by previous stimuli till we are nothing more remarkable than cigarette machines, which go on giving packets of cigarettes for sixpences, till emptiness or arteriosclerosis puts an end to all that ?

Whatever our views of the ultimate structure of the mind, there is no reasonable doubt that much more of our life than we generally think is governed in this reflex fashion.

But let us return to Sally. Sally had the same inheritance as Miss Beauchamp. They were of necessity subjected to the same environment, the sensory stimuli they received were identical. And yet Miss Beauchamp could read French and Sally could not. One might, of course, argue that Sally was a sort of psychic teratoma, a Siamese twin of Miss Beauchamp, if you like. But think of those two alternating personalities, B_1 and B_2, which together form the integral Miss Beauchamp. When the separation occurred they each carried the memories of the earlier part of the Beauchamp life with varying proportions of the primitive emotions—sex, for instance. But will a theory of mental construction which allows only the reflex as its constituent part account for all this ? I think not. You see, if the development of the mind consisted only of the laying down of more and more complicated reflexes on the inherited instinctive reactions, then the action on the part of the organism which follows a certain stimulus —that is, a change in the environment—must follow inexorable laws. Thus if one had a complete map of the mind—the neurones and what-not in this case—with the resistances at each synapse known, then one could actually forecast the reaction to any given stimulus. In other words, the activities of the organism are determined, since it must always act in the light of experience alone and nothing else. But " determinism " in its wide sense as a philosophical idea is dead. Even the mathematician who is unembarrassed by considerations of the enormous conceit of the human race realises that. It used to be thought that if the exact position of a particle in time and in space were known, and the natural laws governing the activities of that particle were known, then its position at a given time in the future could be calculated. But now this is known to be untrue. " Natural laws " are known to be nothing more than probabilities. One can only say that in the light of experience we know that such a thing in such a condition *usually* acts in such a way. But even in the physical world this is not always true. Electrons jump from their prescribed paths in a completely autonomous manner. Can we any longer believe that the universe *se construit aussi fatalement qu'on triangle dont une côte et deux angles sont donnés ?*[7]

Now let us apply this to the mind. Here we are dealing with something much more complex than inert matter. And therefore we cannot expect to be able to explain its actions on a theory less complex than that which applies to mere physics. If one can no longer formulate laws which will govern the activities of a single electron, even with the vast amount of objective evidence at one's disposal, how can one attempt to formulate laws for the mind on a less complex basis ?

And, further, if the mind did really work on a reflex basis, there would never be any reason at all why it should ever go wrong so long as the brain were spared organic disease. One cannot conceive of functional disorder on this reflex theory, because, just as the formula, as it were, of the universe

at any distant date would be calculable in a determinate world, so would the exact reaction of the mind be known to any given succession of environmental stimuli.

And then there is the difficulty of the unconscious. I cannot define what consciousness is at all, but nevertheless the expression does mean something to me. Now if the mind is simply this pattern of neurones, then how is the distinction between the conscious and the unconscious made? I suppose the simplest way would be to consider that certain neural pathways have, as part of their essential structure, the special endowment of consciousness—if you like, that the function of consciousness has a particular anatomical situation in the brain. But this and all other similar ideas are so manifestly absurd in the light of the phenomena of subconscious activity. What in one person might constitute conscious feeling, in another is banished to the unconscious, where it may become the origin of neurotic symptoms. In other words the plane, the complexity of thought is not altered because it is not on the conscious level. To use a crude analogy, the difference is not the sort of difference between cortical and thalamic sensation. That is, the difference is not one of anatomical nervous level. Sally, for example, or the Spanish gipsy girl which appeared in the body of Maria, thought and learnt things entirely unknown to their respective hosts. They were functions carried on in the subconscious mind and yet at times they became endowed with full consciousness. Janet suggests that the genesis of such conditions lies in the limitation—the drawing in—of the boundary of consciousness to leave certain ideas outside. Thus the emotions associated with sex, especially if of a perverted nature and clashing with accepted social standards, may be excluded from the conscious life of an individual, but retaining their force creep in at odd times in dreams, or, assuming fantastic shapes, manifest themselves in oddities of behaviour such as compulsions, obsessions and what not. This happened to Maria. Sex was regarded with such horror in her school and in her home circle that she had to ignore the whole thing. But deep down, the emotion, with all its enormous potential activity, was waiting for an outlet. It let off a little pressure, as it were, in day-dreaming. But with the death of her father, who, it must be remembered, was one of the factors causing this drawing-in of her consciousness largely to the exclusion of sex, released these pent-up feelings to such an extent that almost a new individual was formed. But the original splitting-off of sexual function from the conscious life of Maria was so complete that re-synthesis to form a normal balanced individual was impossible, and so her life had become separated into two largely autonomous parts.

Perhaps it would be as well at this stage to consider briefly what conclusions we have come to about the anatomy of the mind, and why.

We started with the primitive instincts as a basis. The evidence for these is biological, and their existence is without doubt, as their universality itself shows. And further, that they are fundamental is shown by the often rather appalling fact that however we try to manage our lives we cannot escape from them. They are utterly inexorable. And thus they carry a large charge of psychic energy, which can flow into and endow with activity the next layer in this psychic hierarchy. On this higher level we have a structure whose shape depends at least largely on environmental circumstances. This is the domain of the conditioned reflex. Here the energy of the primitive instincts is directed according to the exigencies of the situation into certain activities. Here, too, is the function of memory, stored as "facilitated pathways" in the brain.

Some would have us stop here, and say this is the structure of the mind. But I have shown that the existence of certain phenomena, such as subconscious activity, and the genesis of functional disorder make this an inadequate explanation of the facts. The day is past when hysteria could be ascribed to congestion of the ovaries, as Charcot thought.[8] And as scientific method becomes more exact, it becomes more and more borne in upon us that we cannot hope for an explanation of such disorders along purely mechanical lines. We have quoted cases in which one of the primitive instincts has grown up and infused its energy into a superstructure divorced from the rest of the individual's mental organisation. We have here a sub-stream in the mind, meeting the main one here and there, but largely separate from it. And sometimes this secondary stream, from long damming up, eventually bursts its banks and flows into consciousness with dramatic results.

There is evidently, then, not enough here to explain the known facts. The theory is, therefore, so far at least an inadequate one. One must explain why "layer two" sometimes splits up and sometimes goes wrong, remembering that it is at this level that our normal life goes on. It is mostly automatic, but not completely so.

It would seem, then, that if the normal mind reacts as a co-ordinate whole, and that in those minds which are the subject of functional disorders this phenomenon of "splitting" occurs, then it is essential to postulate a normal cohesive force, whose weakening is at least in part the cause of

functional disorder. Of course, it cannot be the only, or rather the entire cause. For the moment I would suggest the somewhat crude analogy of comparing the mind to a strip of rubber. Activity consists in alteration of the length of that strip according to alterations in the tension upon it. These alterations in tension correspond to alterations in the environment. And just as rubber once stretched will stretch more easily again, the phenomena of facilitation is shown. The degree of stretching besides depending on the stretching force and on the elasticity of the rubber, depends also on its tensile strength. And if the pull of the force is too big, or the rubber too weak, it breaks and there are two pieces. To apply the analogy : if the stress caused by the environment on the organism, or the force of cohesion between its constituent parts is low, some degree of dissociation occurs, and the result is hysteria, a neurosis, or some degree of multiplicity of the psychic structure.

What is this cohesive, perhaps directing, force ? I have tried to show with purely objective evidence that it must exist. Of course, its existence has been thought of by many. But the conclusion is often reached in esoteric ways. Thus McDougall naively states that *of course* we know that nobility of mind, altruism, exists. Isn't it obvious ? And so he calls it the " sentiment of self-regard." Janet is more lucid.[9] He calls the instincts—my lowest stratum—*tendances suspensives* ; the second stratum, the *tendances socio-personelles*—that is, the conditioned reflex level. Above these are the *tendances intellectuelles*. And he still has to find the unifying factor. This consists of a vague idea, *veritable egoism*, conjoined with, or controlled by, the *tendance au travail*, or " inclination to work." And he goes on to say, delightfully enough, " Work is a kind of activity which is more difficult and more rare than one would believe. It does not exist among animals and primitive races in spite of appearances." This expression, I think, the " inclination to work," is not a very happy one. I prefer the term, *élan vital*. It means nothing, or very little, in itself. I think it best of all, so long as one does not imply with it all the qualities with which Bergson endows it.[10,11]

I conceive of this *élan* pervading the whole structure of the mind, guiding it, driving it on to an unknown destination.

It maintains the psychic energy derived from the primitive instincts in one broad river, and prevents the stream dividing up into so many rivulets, each with different amounts of energy derived from different primitive desires. And because sex is that instinct which most of all conflicts with the rest of the mental function—the social tendencies and even more the intellectual ones—it is the most frequent one to break away with its own set of higher developments. And this autonomous mass of mental activity, banished and no longer correlated with the rest of the mind, lacking in the controlling power of the *élan vital*, grows wildly and fantastically. It may subordinate other functions to its own ends. It may become malignant, that is. And just as a metastasis of a tumour of the thyroid gland, in bone, say, may secrete thyroxin, so might strong though repressed sexual activity utilise other mental activities for its expression. And just as a pathologist, presented with a small section of that metastatic tumour, might say, " This is thyroid gland," hasn't Freud said " This is sexual activity " when he sees in a very small part of the mind vicarious activity of that kind ? And perhaps in reality it is only a spread of that emotion beyond its normal limits because its normal activity is forbidden.

In all these cases, then, of hysteria, multiple personality, and so on, is not the real fault a depression of this guiding factor, a depression of psychological tension owing to *la misère psychologique* ? Cracks appear in our carefully built-up plan of the mind. A complete crack—and behold a case of multiple personality ; smaller ones, and we have all the hysterias and the neuroses. And if the guiding factor, this " inclination to work," is lost altogether, have we not chaos—in fact, a fully-blown psychosis ?

The subject is so vast and its implications so many that I can do no more than imply in admittedly vague terms that perhaps the whole range of psychopathological conditions may be explained by reference to this anatomical conception of the mind.

I would conceive the mind built up on the foundation of the primitive instincts. These are endowed with energy, which can be translated into bodily activity by the organism when the appropriate stimulus is given. And when this reaction is evoked the individual feels the corresponding emotion—fear, for example, correspond-to the instinct of self-preservation.

On this basis, as a result of the activity of the environment, is built up a great structure of conditioned reflexes. This level governs particularly our ordinary social activities. And it has secondary emotions connected with it—perhaps shame, with its accompanying motor reactions. Rather higher, but in reality of the same nature, are the purely intellectual functions—let us say the æsthetic emotions, and the delight in intellectual exercises.

And, above all this, guiding the primitive instincts, controlling, suppressing and fortifying the reflex reactions—that is, endowing the organism with the power to choose—is the *élan vital*, the inclination to work, the desire to live, or what other inadequate term you wish to call it by. This factor preserves the integrity of the whole thing, regulates character and thus gives us an integral personality.

It is depression of this factor which leads to dissociation in the strata below, the most extreme example of which is, perhaps, the exhibition of multiple personality. And when dissociation occurs it may go right down to the primitive emotions, so that one or other instinct may leave the rest and endow the split-off piece with the necessary psychic energy to maintain it alive and form the mechanism which gives us the clinical picture of a dissociated personality.

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The Reticulo-Endothelial System

A Paper read before the Physiological Society of Guy's Hospital, on 16th November, 1934, by L. C. Thomson, Esq.

MR. CHAIRMAN and GENTLEMEN,—As compared with the other systems of the body, the reticulo-endothelial system is young, for it was only differentiated as a definite entity in 1913.

In this year Aschoff published his monumental work on this subject, and showed that there were in the body various cells which all had the common property of being able to absorb into their cytoplasm particles of colloidal dye, which had been presented to them via the blood stream of a living animal.

Aschoff's technique is briefly this. A rabbit is taken and about 5 cc. of a colloidal dye, such as Indian ink or trypan blue, are injected into the vein which runs along the lobe of the ear, and six hours allowed to elapse. After this time the rabbit is killed and its tissues examined microscopically, when it is found that throughout the body in various situations there are cells in whose cytoplasm are collected particles of the colloidal dye. Thus Aschoff classified all these cells, which were able to take the dye into their cytoplasm as cells of the reticulo-endothelial system.

It is at once clear that this is no system for the anatomist, for he is unable to demonstrate it by dissection, and since it is only definable by special methods, it may be regarded as a purely physiological system, having the same physiological function, *i.e.*, the ingestion of foreign particles.

The previous work which lead up to Aschoff's classification was directed towards this property to ingest solid particles by Metscnicoff. His studies were mainly centred on pus and exudates, in which he was able to demonstrate dead bacteria in the cytoplasm of the pus cell. In fact, a great many workers had been studying various parts of the system for a long time, but it was not until the colloidal dyes or the intra-vitam stains as they are called, came to be used that Aschoff was able in 1913 to give the reticulo-endothelial system its individuality.

Within almost every organ of the body there is somewhere a reticulo-endothelial cell, and for the purposes of classification they may be divided into two main classes :—

(*a*) Fixed cells.
(*b*) Mobile cells.

The fixed cells form the greater part of the system, and lie :—

(1) In all connective tissues all over the body, where they are called histiocytes. These cells become exceedingly active during inflammation in their neighbourhood, and play a part in the repair of the consequent damaged tissue. They are then called free histiocytes.

(2) In the reticulum of the spleen and lymph nodes, where they form a great network through which the blood or lymph slowly percolates. These cells are provided with long fllaments, which intermesh and form the reticulum or splenic pulp.

(3) Along the lining of specialised venous sinuses in the spleen, bone marrow and liver. In

the liver the cells are called Kupffer cells and line the liver sinusoids.

(4) Within the splenic network, caught, as it were, in the meshes, where they are termed splenic cells. These cells are intimately bound up in the production of the mobile element of the system, which is resident in the blood and there helps to swell the number of white cells under the name of " monocytes."

Several suggestions have been made as to the origin and inter-relationship of these cells, and although there is some agreement in the suggested theories, by no means all the authors conform to any generalised plan. Fig. 1, however, gives briefly the essentials, namely, that the reticulo-endothelial system in the spleen, etc., form the monocyte by division, and that the free histiocyte of inflammatory lesions comes from both fixed histiocytes and monocytes which have migrated to the lesion from the blood. The fibrocytes or cell of the fibrous tissue is formed from these free and fixed histiocytes.

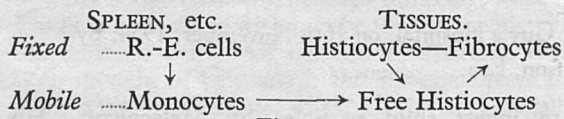

Fig. 1

From this description it can readily be seen that the cardinal feature of the structure of the reticulo-endothelial system lies in its diffuseness; it permeates the whole body, and is ready, in fact, to deal with any foreign matter which may present itself.

On the other hand, its chief physiological characteristic is ingestion, or phagocytosis, and this action, combined with intra-cellular digestion, lies at the bottom of any function which may be attributed to the system. In many ways the amœba likens itself to a reticulo-endothelial cell, for if, in its passage across the bottom of a stagnant pond, the amœba encounters a smaller animal or other particle of food, it surrounds it with a pseudopodium, and allows it to pass through the limiting cell membrane. Once inside it is digested and disappears into the general cytoplasm. The difference, however, between a reticulo-endothelial cell and an amœba is that the latter ingests only food substances, whereas the reticulo-endothelial cell ingests any particulate matter which is presented to it. The system is, then, a scavenging system ready to clear the blood and tissues of any debris or noxious material which might hinder the function of the cells.

In view of this phenomenon of ingestion, it is not surprising that several important phagocytic functions have been attributed to the system. When a tadpole becomes a frog it loses its tail, and this is brought about by the phagocytes actively ingesting them, and liberating the products of digestion into the blood to be dealt with elsewhere. Similarly, phagocytosis takes place around the ends of any growing long bone of the skeleton, for since the end of the bone is wider than the adult shaft, it is clear that some bone must have been absorbed, because it was all originally produced from the same epiphysial cartilage. Another instance of phagocytosis is the removal of the distal portion of a severed nerve fibre. As the axis cylinder breaks up the local reticulo-endothelial cells help the neurilemma cells in removing the debris and myelin of the sheath. They thus leave a pathway clear down which the new cylinder may grow. As stated above, the system may phagocytose colloidal dye—in fact, any matter which is not in solution and is floating about in the blood and tissues is liable to be absorbed by these scavenger cells. If a tissue is damaged in any way, then it will be cleared of debris and dead tissue by the reticulo-endothelial cells. On the property of dye absorption depends the process of " blocking." This process is used to eliminate as far as possible the effects of the reticulo-endothelial function, and depends upon the fact that so much dye may be absorbed into the cells that they become quite useless for further processes, and this measure, combined with splenectomy, is largely used in determining what part the reticulo-endothelial system plays in any particular process.

A process which has now been attributed to the reticulo-endothelial system is that of the breakdown of hæmoglobin to form the green pigment of the bile—bilirubin.

For many years it has been known that bilirubin was one of the products of hæmoglobin breakdown, and since the bile was excreted by the bile duct it was legitimately supposed that the liver cell was the site of this transformation. The only contradictory evidence to this theory, moreover, was the fact that if blood was forced into the tissue spaces, as in a bruise or black eye, a pigment was formed during the breakdown of hæmoglobin, which resembled bilirubin very closely. This theory had for its support the classic experiments of Minkowski. He took some geese and, cutting out their livers, injected a solution of hæmoglobin into their circulation, and thereon, finding that no bilirubin was produced, concluded that the site of its production, and therefore of the breakdown of hæmoglobin, was the liver cell.

However, it was soon found that bilirubin was present in human blood serum, which, of course, would be impossible if the liver were the only site of its formation, and this stimulated McNee in 1913 to repeat Minkowski's experiments. At first he

obtained the same results, but when he used dogs instead of geese, he found that he could find bilirubin in the blood, even after complete liver removal. But, unfortunately, this did not satisfy everybody, for it was suggested that McNee's bilirubin was reabsorbed from the alimentary tract, and it was not until Mann in 1924 removed both liver and alimentary tract *in toto* and still was able to obtain the pigment in the blood that the extrahepatic formation of bilirubin was validated.

The available evidence then began to point to the reticulo-endothelial system as the site of hæmoglobin breakdown. It was possible, of course, that the breakdown occurred in the blood, but that was eliminated by perfusing an ordinary " heart-lung preparation " with hæmolysed blood and failing to obtain bilirubin.

Rich found that he was able to grow reticulo-endothelial cells in culture tubes, and that these cells broke up the hæmoglobin that he presented to them. It was also found that if the reticulo-endothelial system was " blocked," bilirubin could not be formed in the circulation.

But the most conclusive evidence of all is that, if the bilirubin content of the artery and vein supplying an organ are compared by the Van den Bergh reaction, it is found that in the vein leaving an organ rich in reticulo-endothelial cells there is a marked bilirubin increase, and further, the reticulo-endothelial cells can be shown histiochemically to contain the bilirubin in crystalline form, before it is liberated into the blood stream.

It may be seen why Minkowski's experiments on the goose were so misleading, because in these animals the liver contains not only liver cells, but also all the reticulo-endothelial system as well. Further, it is now clear why a bruise should break down to form bilirubin in the tissue spaces, for there lie the histiocytes, ready to break up any extravasated hæmoglobin and repair any damaged tissues, which its presence may have caused.

The next interesting function of the reticulo-endothelial system is the part it plays in fighting infection by a micro-organism.

The body defends itself from invasion by micro-organisms with three barriers :—

1. The intact skin, and mucous membranes. This is a very important barrier, but the reticulo-endothelial system plays no part in its maintenance.

2. The tissue fluids. These consist of the blood and lymph, and in them are the various antibodies of the body.

3. The reticulo-endothelial cells.

These last two defence mechanisms are responsible for the phenomenon of immunity, which consists in the host becoming more sensitive to the presence of the invader, and being able to eliminate him the more easily. The body of the host does this in two ways:—

(*a*) By producing antibodies in the tissue fluids which kill the organism and neutralise its irritating toxins ; and

(*b*) By increasing the power of the reticulo-endothelial phagocytosis to a remarkable extent. Although these mechanisms work well in the ordinary host, the production of immunity is the sensitisation and speeding up of these bodily processes.

When the organism has passed barrier one, the intact skin, it may be eliminated in one of two situations : either in the tissue spaces, where an abscess is probably formed, or in the blood stream and reticulo-endothelial system elsewhere.

In local infections the reticulo-endothelial system can actually be watched going about its business, when an infected web of a frog's foot is placed under the microscope. Vessels are seen to dilate; and white cells of the blood migrate fast to the site of the infection. However, at first polymorphonuclear cells only, which are not members of the reticulo-endothelial system, attack the organism. The latter, when many are dead and pus is beginning to form, the histiocytes and monocytes enter the battle and phagocytose not only the remaining unkilled organisms, but also all the dead polymorphs and debris of the damaged tissue. Their job is, therefore, to make way for a reconstruction, which is undertaken by the fibrocyte and is in the nature of a formation of fibrous tissue to bind the sides of the cavity, so formed, together. The whole process of local inflammation may also be watched in exudates in the peritoneal cavity, and if the reticulo-endothelial cells have been vitally stained beforehand the part played by the system can easily be assessed to be one of reconstruction.

In general infections or infections which have reached the blood stream the part played by the reticulo-endothelial system is mainly determined by " blockage " methods. For instance, it was found that in animals previously " blocked " and having undergone splenectomy infections became both more virulent and more rapidly fatal. This is true of bacteria, spirochætes, or even viruses. In similar animals it was found possible to infect them with a species of organism to which the normal animal was naturally resistant, and it seems that natural resistance is an enormous power of phagocytosis, which the animal exhibits towards the particular organism, for instance the frog to the pneumococcus and the hen to bacillus anthrax.

Further, if an immunised animal was taken, it was found that by splenectomy and " blockage,"

immunity could be broken, and the animal became as susceptible to infection as a normal animal. Outside the evidence of " blockage " is still the fact that bacteria can be demonstrated in the reticulo-endothelial cells in the process of being digested during an infection, and these cells are found to be able to absorb remarkable numbers in the immunised animal.

Some say that the tissue fluids alone are responsible for immunity, but this theory may be disposed of on the grounds that if an immunised animal is taken and its whole blood volume changed with that of another non-immunised animal, immunity still persists, showing that it is cellular in nature and only helped by the humoral mechanisms in the tissue fluids.

(To be continued)

Correspondence

Rugby in 1888

To the Editor of the GAZETTE

SIR,—The unfortunate result of the Cup-Tie bears a curious resemblance to that of the 1888 match against St. Thomas's, under Sir Alfred Fripp's captaincy. It was the time of three three-quarters, and the Guy's line contained three internationals—English, Scottish and Welsh. One of the halves played for his county, and I believe the other also. Of the forwards, A. Allport received an International Cap soon after. Big fights had been put up against some of the crack Yorkshire clubs, a strong Blackheath team had been squarely beaten in the previous week, and it looked like Lombard Street against a China orange on Guy's for the Cup.

In the match nothing was scored in the first half, and then one of St. Thomas's men dropped an amazing goal from about half-way against the wind. Guy's could only retaliate with a try, and so began St. Thomas's long, unbroken series of eight or nine victories.

Some 30 years later I met the hero of the dropped goal, and he was surprised to find it was still remembered. It was too bitter to be forgotten.

Yours, etc.,

R. L. WASON.

25, Maple Grove,
Bath.

"Nervous Breakdown"

To the Editor of the GAZETTE

SIR,—I see that Dr. Symonds suggests amongst treatments for this complaint " the old-fashioned sea voyage." I hoped that it had died of old age. Pictures of life on shipboard are very pretty, but I cannot think that anyone who has had charge of depressed patients and observed their reactions to the incidents of a voyage (as, for my sins, I have had to do) would send such a patient to sea.

The trivial annoyances (and they are many) which the normal person would dismiss as the commonplaces of travel assume for such people fantastic proportions and are a continual source of worry. One case will illustrate this. It was one of post-influenzal depression in a man who, by the unaided exercise of one of the most brilliant intellects in the country, had reached the House of Lords. Amongst his bugbears were :—

Noise of deck games.
Noise of children playing.
Well-meant attempts to " cheer him up."
The bugle-call to meals.
The sight of anyone using a camera near him caused a perfect frenzy (a new type of " photophobia ").

The whole voyage was a perfect misery to him, and at the end of it he dared not sign his name on a wine-card for fear of what it might entail. It was pitiable to see a man of his mental calibre in such a condition. I heard later that he made a perfect recovery on shore. This was over 20 years ago.

Dr. Symonds mentions the risk of suicide, and it is a very real one. Fortunately I never had a case, but a successful attempt is very unpleasant for the doctor, whose responsibilities in a big ship are heavy enough without looking after potential suicides.

I one sailed with an old skipper who told me of a man sent off with an attendant on one of his ships who went over the side before Madeira was reached, and I identified the victim as one of my old schoolmasters.

I discussed these matters with a man who had spent some time as doctor on the Australian run, and he quite agreed with me and added the cynical remark that he thought some of these people were never meant to return.

A voyage is an easy way of getting rid of a troublesome patient, and I would earnestly beg anyone who contemplates sending such a one to sea to think seriously before doing so.

Yours, etc.,

FORMER SHIP'S SURGEON.

Oral Sepsis

To the Editor of the GAZETTE

SIR,—In his paper on "The Disappearance of Dentistry," published in the *Gazette* of January 19th, Mr. Edward Dunstan refers to the discovery of oral sepsis by Dr. William Hunter. Most readers would assume from what he says that Dr. Hunter was either a Canadian or an American, and that he first announced his discovery in 1910. The term "oral sepsis" was invented by Dr. Hunter in 1900, the year in which he published his first paper on the subject. He is an Edinburgh graduate, and was at that time assistant physician to Charing Cross Hospital, of which he is now consulting physician.

In the 35 years which have elapsed since 1900, Hunter's views have been universally accepted by both the medical and dental profession. Few discoveries in medicine have been productive of more good than the discovery of oral sepsis. The recognition that it is an important cause of ill-health has led to an improvement in dental hygiene in all classes which is almost impossible for the present generation to imagine.

An additional reason for writing this letter is the curious fact that there has recently been a tendency to confuse Dr. William Hunter, the discoverer of oral sepsis, with his famous namesake, the anatomist and surgeon, who was born in 1718 and died in 1783. In a recent paper on the anatomist, illustrated with a reproduction of his portrait, his chief claim to remembrance is said to be his "recognition of the evil effects of focal infection. In his brilliant lectures he pointed out the remote complications arising from oral sepsis. A century and a half have not weakened the precept of Hunter."

If a quarter of a century is substituted for a century half these remarks can be applied with complete accuracy to the work of William Hunter, of Charing Cross.

Yours, etc.,

ARTHUR F. HURST.

New Lodge Clinic,
Windsor Forest.

Reviews

Lectures on Medical Electricity. By ELKIN P. CUMBERBATCH, B.M., D.M.R.E., F.R.C.P. Published by Henry Kimpton. *Price* 6*s.*

FROG jumps must always seem a curious interpolation in the curriculum to the great bulk of medical students, who spend so many hours toying with that physiological animal, the frog, and that quack attribute of the devil, electricity.

Dr. Cumberbatch gives in his lectures on Medical Electricity a clear, concise account of the properties of the various electrical currents and their reactions upon living tissue, which should be read by all second-year medical students, as a connecting link between the academic and the clinical facts of electro-physiology; and by those in the wards, as an outline of what can and cannot be accomplished in the name of electricity. Here may be found an account of the Reaction of Degeneration, that shibboleth of glib candidates with palsied patients; and of the essential features of diathermy, sheet anchor of those faced with chronic invalids.

Condensed (for as in all lectures some even important facts must often be crowded into small compass) are the salient points of phototherapy from infra red to ultra violet; in fact, if the curiosity of the present-day adventurer is so easily deterred from actual personal investigation of the so-called mysteries of the ubiquitous electrons by the sacred dragons at the portals, then here is the very picture-book from which to learn his A B C!

The Guy's Hospital Reports. Vol. 84, No. 3. Edited by ARTHUR HURST, D.M. *Price* 12*s.* 6*d.*

THE July number of the *Hospital Reports* opens with an account by Sir William Hale-White of three Guy's physicians of the early 19th century—Babington, Laird and Curry. Of these Babington was easily the most notable; his is the best-remembered name to-day, and the essay deals for the most part with his life and varied activities. There have been few physicians more deeply interested in all manifestations of natural science than William Babington. He played an active part in the foundation of four scientific societies, and may be regarded as the real founder of the Geological Society. On his resignation from the post of Physician he was appointed a Governor of the Hospital, and when he died such was the admiration he had inspired amongst his fellow men that a statue of him was erected in St. Paul's.

Of Curry and Laird little is, and it might seem can be said other than that the first was devoted to calomel and the second shared Babington's interest in mineralogy.

The largest single contribution is a very complete review by Dr. Hurst of the condition which

he urges is best described as megacolon—a term he uses to cover both the adult and juvenile forms of the disease. He elaborates his belief that the primary ætiological factor is an achalasia of the sphincter ani due to a disturbance of the balance between sympathetic and parasympathetic control. Those cases in which the dilation appears to commence at the pelvi-rectal junction are, he states, caused by a prominent fold of mucous membrane and do not form a distinct group, but are equally due to a primary anal achalasia.

Methods and results of sigmoidoscopic and radiological examinations are given, and Dr. Brigg's radiograms demonstrate beautifully some of the points Dr. Hurst makes in the text. Treatment is discussed with improvement of function the criterion of success. In non-operative treatment, reduction of the tone of the sphincter fibres was best obtained by the use of a conical ebony bougie. The merits of operative procedures such as colectomy and the various types of sympathectomy are reviewed. On account of the mortality and the almost inevitable return of symptoms colectomy is condemned; as, in Dr. Hurst's view, the underlying cause is an underaction of the parasympathetic, benefits from sympathectomy —and it appears to be too early to pass judgment yet—would be due to a deprivation of the sphincter of its normal tone, it is then less firmly closed and permits the more easy passage of fæces.

Dr. Hugh Barber, of the Derbyshire Royal Infirmary, in "Hæmorrhagic Nephritis and Necrosis of the Liver from Dioxan Poisoning," describes five fatal cases of workers engaged in a particular process, involving the use of di-ethylene dioxide. Short, intense exposures to the toxin appear to be more serious than frequent slight exposures, and in the cases recorded the disease ran a course of from five to eight days. The kidney lesions were regarded as being responsible for death, and, though the liver necrosis was extensive, there was clinically no jaundice. In contrast to the effects of such liver poisons as chloroform, fatty change was absent. The microphotographs accompanying the article show clearly the histological lesions in both kidney and liver.

Dr. Keith Simpson in the first of his two studies, "Sclerema Neonatorum," includes an analysis of the cases already recorded. In only six has there been sufficient biochemical data to justify the diagnosis, though a further seventeen may be included and bring the total to twenty-three.

A clinical report of a case born during the last year in the Hospital is given, together with the criteria which had to be satisfied in making the diagnosis. Dr. Simpson describes the biochemical reactions of the fats found in this condition, and gives the current opinions of their composition.

In his second contribution, "Observations on Gastritis," the incidence of gastritis and hyperacidity is noted and evidence produced to show that a gastritis relatively innocuous in itself will, in the presence of hyperacidity, give rise to an acute peptic ulcer. And, conversely, the conclusion is reached that hyperacidity is a relatively dangerous state due not to the titre of acid, but to the possibility of an attack of gastritis.

Dr. Campbell and Dr. Suzman in an account of the "Heart in Myxœdema," include reports of eight cases. The apparent contrast of the occurrence of heart failure in myxœdema and relief of chronic heart failure by thyroidectomy—as recorded by Blumgart and others—is discussed. Details of a case of heart failure showing marked improvement after total thyroidectomy in this hospital are given. The conclusion is drawn that the signs of heart disease usual in myxœdema—enlargement of the heart and flattened T waves—and such symptoms as dyspnœa and slight œdema can be relieved by thyroid treatment unless there is organic heart disease present.

"The Value of Anti-Scarlatinal Serum in the Prevention of Post-Scarlatinal Nephritis" forms the eleventh of Dr. Osman's "Studies in Bright's Disease." The figures were obtained in an investigation conducted primarily to determine the influence of previous tonsillectomy on the occurrence of post-scarlatinal nephritis. Records of 11,000 cases were obtained, and about a quarter had received serum. Concluding Dr. Osman is content with the bald statement that "Anti-scarlatinal serum is of no value in the prevention of post-scarlatinal nephritis."

In "Fallacies of Fæcal Bacteriology" Dr. Knott describes the effects on the bacteria in the alimentary canal of gastric abnormalities, diet, indigestion, and irregular intestinal movements. He assesses the significance of atypical coliform strains, and submits that the explanation of their inconstant pathogenicity lies in the known occurrence of variation in bacterial virulence.

Mr. T. T. Stamm subdivides backache into six main groups in "The Rôle of Manipulation in Treatment of Lower Back Pain." Case reports of the types are given, and an analysis of the results has shown cure or marked relief following manipulative treatment.

Dr. G. P. B. Whitwell contributes "Recurrent Mouth Ulcers," in which he deals with the pathology and treatment of the so-called "aphthous stomatitis," or "dyspeptic mouth ulcers."

P. W. C.

Message to a Beacon that Passed in the Night

Oh, shattered Pimp,
Perched high upon thy gaudy pole
Remote,
Yet vulnerable in helpless ugliness ;
Swift
Was thy fate.

O wretched effigy
Of Ministerial well-meaning ;
A martyr
To savage youth's hilarity—
Thou'rt sunk !

Bewildered Blob ;
Dost ask
Of me why they should strike you down ?
For your assassins
Are as yet undistinguished Quixotes,
Tilting
At a hideous but striking emblem
Of life's prohibitive
Complexity.

D. S. C.

Sport

Rugby

Guy's v. Aldershot Services

ON Saturday, February 2nd, Guy's entertained Aldershot Services at Honor Oak Park and were defeated rather unexpectedly by 2 placed goals and a try (13 points) to a placed goal and 2 tries (11 points).

The result was a great disappointment to the supporters of the Hospital. The victory over Gloucester the week previous, coupled with the fact that the side had already beaten the Army, made it appear that Guy's had an easy match before their Cup-Tie with Bart.'s. Although the forwards played magnificently, the backs for once had an off day, and nothing went right. In the set scrums Guy's secured the ball continuously ; in fact, it speaks volumes for Hopkins that the Services only obtained the ball on three occasions.

With such an advantage one would have though, that Guy's would fairly over-run their opponents, but Hobbs and Linton two experienced wing forwards who were so quick on the Hospital backs, that few attacks were allowed to develop.

Bowles, who was deputising for Stanyon-Jaques, was at times handicapped by the slowness in which the ball was heeled, but on several occasions he failed to find his partner by erratic passes and a proneness to lob the ball far too much.

Having won the toss, Guy's decided to play against the wind, and in the first few minutes Guy's missed a penalty and Chetwode, instead of touching down, ran into position before finding touch with a huge kick which landed in the Hospital's 25. From here Fichardt broke through splendidly and Jones tackled him and sent Guy's back to their 25.

The Services pressed and, from one of the scrums that followed, McCreight slipped round the blind side and side-stepped several opponents before crossing for a well-deserved try, which Howard-Jones converted.

From the kick-off Aldershot were again within an ace of scoring when Harris dribbled the ball along the right wing, but Alexander raced back to touch down in the nick of time.

Two or three excellent openings were thrown away by the Hospital through erratic passing, and just when it appeared that Guy's must score, the Services cleared from a penalty.

Aldershot were making full use of the wind and finding touch with kicks, which carried them from one end of the field to the other. A rally by the Hospital forwards followed, and after some snappy passing, a long pass was sent to Giesen ; Wright raced inside to accept his pass, and eventually Alexander crossed in the corner too far out for Kark to convert.

Up to this point it appeared that Guy's were taking things easily and were only waiting for the change of ends to have the wind advantage. A sharp attack by the Services was repelled by Giesen, and Wright, following up the latter's kick, caught Chetwode in possession. Stewart made a determined effort to get through, and then Giesen tried a drop at goal, but all of no avail. Just before half-time, Guy's went all out for a score, but a splendid passing movement for three parts of the field ended when the whistle sounded for interval.

Guy's started the second half almost the same as they had finished the first—the whole team combined together beautifully and a nice run by Wright carried play to the Services' line. Following a loose scrum Ziervogel secured and forced

his way over for a try, which Alexander converted with a splendid kick from the touch-line.

Another excellent effort by Alexander soon afterwards deserved a better fate; after handing off two opponents, he created a great opening for Wright, but the latter over-ran the pass and knocked on what would have been a certain try.

Guy's were now on top, and Fichardt got through only to see his effort wasted as the result of a forward pass.

Then the Hospital had the first of the shocks which were to follow. McCreight and Hobbs broke away on the left wing and Guy's were lucky to keep their line intact. However, the Services were very persistent, and blunders in the Hospital defence let in the Aldershot forwards, who carried the ball over the line; Fletcher tried to clear, but missed his kick, and in a flash Stephenson touched down to make the scores eight all.

The visitors followed up this success with a well judged interception by Linton, who left the Hospital defence standing and cleverly side-stepped full-back before touching down for a try behind the posts, which Howard-Jones converted.

Following this reverse Guy's made many attempts to get through, but time after time the attack broke down through passes being dropped or forward. The tackling of the Services was undoubtedly very deadly and sure; in fact, their defence was very nearly perfect.

However, near the end a clever bout of passing from right to left gave Stewart an opportunity, of which he made full use, but he had a hard passage before successfully crossing the line for an unconverted try. Play was now exciting and, although Guy's tried all they knew to cross, they failed to penetrate a powerful defence.

Team.—J. van A. Steytler; C. G. Wright, P. C. Alexander, T. Fichardt, R. M. de Gregory; J. E. Giesen (Capt.), V. H. Bowles; M. R. Kark, P. K. Hopkins, C. S. Darke, E. R. Davies, C. F. Ziervogel, R. O. Yerbury, P. Fletcher, T. A. Hale-Monro.

Inter-Hospitals' Cup, First Round
Guy's v. St. Bartholomew's

AT Richmond, on Thursday, February 7th, Guy's met their old friends and Cup-Tie opponents "Bart.'s" in the first round of the Hospitals' Cup to decide who should meet the holders in the next round, and, after a very hard struggle, Bart.'s succeeded in securing the verdict by a dropped goal and a try (7 points) to a try (3 points).

Although the result must come as a great disappointment to many old Guy's men, there is no doubt that Bart.'s fully deserved their success, especially when one recalls the magnificent display given by their forwards and the superb tackling by their back division, who put up a defence which was well-nigh impregnable.

To Bart.'s we offer our hearty congratulations on their success, and the members of the team carry the good wishes of all those connected with Guy's in their efforts to regain the coveted trophy.

The great day arrived with both Alexander and Ziervogel feeling the effects of "flu," but they both turned out, so that Guy's were at full strength. On the other hand, Capper, who had been injured the Saturday previously, was found to be unfit, and this robbed Bart.'s of a fine forward.

After Nel had dropped a wonderful goal for Bart.'s, Alexander was off the field until near the interval. During his absence Guy's reorganised their back division, but Bart.'s managed to score an unconverted try, and at the interval led by seven points to nil.

Soon after the restart, the Guy's forwards, who had been kept very subdued, woke up and began to master their opponents, but within a few minutes a calamity befell the Hospital when Giesen, their captain, in following up a kick ahead, ran into Morrison, the full-back, and displaced a cartilage, which prevented him from taking any further part in the game.

From the start the pace was terrific, the game being transferred from one end of the field to the other with amazing rapidity; it was a question of which side would crack first, but both lasted out exceedingly well, although in the second half Guy's were definitely on top, but failed to pierce a rock defence.

The very nature of the scoring gives a vivid impression of the mobility and pace of this exciting game, which raged from one camp to the other.

Amidst tremendous excitement Guy's kicked off, but after a good passing movement Guy's were penalised and, with the wind behind them, Bart.'s found touch in Guy's 25.

A blind side movement and a cross-kick found Bart.'s in a favourable position, but Fichardt cleared cleverly and found touch near mid-field. Giesen then tried to get his backs going, but Alexander knocked on and soon after Burrows intercepted, but his pass went astray. Bart.'s pressed heavily, and Guy's were compelled to touch down, but later Stanyon-Jaques and

Fichardt got away on the blind side of the scrum and relieved.

After a quarter of an hour's play Giesen cut through, but was tackled by Kingdom. Newbold immediately started a dribble taken on by Burrow, who worked his way to Guy's 25. From here the ball was kicked up-field, and cleverly taken by Nel, who, moving at top speed, took a flying kick at goal, and the ball soared between the posts. It was a magnificent effort from near the touch-line, which gave Bart.'s the lead of four points.

Having drawn first blood Bart.'s went all out for further success and, encouraged by their supporters, they tried another forward rush, which was repelled. Both sides were now warmed up and, with every man on his toes, the excitement was intense.

Just as Guy s appeared to get their back division going, Alexander, in one of his characteristic bursts through the centre, was brought down, but in doing so he damaged his knee and was off the field until just before the interval. However, a great effort by Giesen should have ended in a try, for Wright on the wing was waiting, with no one to beat, when a forward threw out a wild pass and a golden opportunity was wasted.

During Alexander's absence and after a ding-dong struggle, Bart.'s carried out a fine passing movement which ended in Bludgen dashing over the line for a try too far out for Morrison to convert.

Just before the interval Bart.'s were penalised for a scrum infringement, but Kark's kick at goal failed.

The second half was started at a furious pace, but within five minutes Guy's lost their captain, Giesen, who tried to follow up a punt ahead, but displaced a cartilage in doing so. Guy's after being penalised in the loose, worked their way to Bart.'s 25, and Alexander was just short of the posts with a penalty. Then Dick nearly got through, but was badly supported, and Youngman relieved the pressure on the Bart.'s line with a good kick to touch.

A good forward rush by the Guy's forwards ended with Nel making a remarkable save, but a further penalty to Guy's saw Alexander make another fine attempt to convert.

The Guy's forwards were now showing excellent form and were definitely on top. Dick again got away, but his pass was knocked on, and soon after Alexander made a splendid run through the right centre, only to find nobody fast enough to accept his cross-kick, which Nel booted into touch from under the posts.

Guy's continued to press, and eventually their efforts were rewarded when Stanyon-Jaques slipped away from a five-yards' scrum and scored an unconverted try in the left-hand corner.

Guy's kept up the pressure, and another great effort by Alexander to save the game was lost when he cross-kicked again, only to see Nel kick the ball from Kark's hands when he was in the act of touching down.

It was a stirring finish and a grand finale to a most exciting game.

Team.—J. van A. Steytler; C. G. Wright, P. C. Alexander, R. C. S. Dick, T. Fichardt; J. E. Giesen (Capt.), K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, C. S. Darke, E. R. Davies, C. F. Ziervogel, T. A. Hale-Monro, P. Fletcher, R. O. Yerbury.

Rifle Association

AN Extraordinary General Meeting of Guy's Hospital Rifle Association was held on Thursday, January 21st, at 1.15 p.m. in Classroom 1 of the Medical School. Five members were present. The hon. secretary stated that, owing to the much-lamented death of Mr. W. H. Trethowan, the Club was without a President, and proposed that Mr. N. L. Eckhoff should be invited to undertake that burdensome responsibility. The motion was seconded by Mr. D. W. Harvey and carried unanimously.

There being no further business the meeting was adjourned.

Mr. Eckhoff, on being approached, very kindly consented to become the President.

R. F. PARFITT,
Hon. Secretary.

Fencing

Inter-Hospitals' Competition, 1935

PRELIMINARY POOLS

THESE took place on Wednesday, January 23rd, at the London Fencing Club. Two pools of eight were fought, in foil, epée and sabre, four fencers from each pool being promoted to the final. In foil, both Guy's representatives, D. M. Paterson and R. F. Parfitt, qualified for the final round with comparative ease. In epée, Paterson again was well up in his pool. G. Wilson-Lawrence appeared to have struck an off day, and unfortunately failed to qualify. In sabre, J. R. Forbes (Capt.) was top of his pool. P. H. Denton had extremely bad luck. After tieing for fourth place and fighting two barrages for it, he was eventually beaten in a third, suffering defeat at the hands of an opponent whom he had already vanquished twice.

FINAL POOLS

These took place at the London Fencing Club on Saturday, January 26th. In foil, Paterson suffered one defeat only, and was placed second. Parfitt gained the fourth place. In epée, Paterson, as in last year's competition, won the Individual Epée medal by coming top of the pool. In sabre, Forbes tied for fourth place and, being defeated in the following barrage, was placed fifth.

Points were awarded on the order of places in the final pool, 16 for first, 15 for second, and so on. As a final result Guy's failed to retain the Cup by the narrow margin of two points. The final results were :—

St. Thomas's	55	points.
Guy's	53	,,
University College	46	,,
St. Bartholomew's	37	,,
Middlesex	30	,,
London	21	,,
Westminster	19	,,

Hockey

Guy's v. King's College Hospital

AFTER a walk-over in the first round of the Inter-Hospitals' Tournament due to St. George's "scratching," Guy's met King's College Hospital in the second round on January 29th at Osterley Park. A keen game ended in a draw, 1—1, both sides being handicapped by the muddy ground.

Guy's lost the toss and started playing up hill and against the sun and wind, but, in spite of this had a little the better of the game. Neither forward line took full advantage of the chances given them until King's College Hospital broke away and scored with a difficult shot from close quarters after being checked in the circle (1—0).

In the second half Guy's started with a hustle and combination which was good to see, and Jenkins soon scored after a nicely judged flick-pass up the field from Turner (1—1). After this Guy's raided the King's circle time and again, but good work by the King's goalkeeper prevented further scoring. King's also broke away several times, but the backs and Gillett, who had but a little to do but did that little very well, successfully repulsed them.

The inside forwards showed at times sparkles of combination and thrust, glimpses of good things to come, and Franklin, on the wing, attacked strongly. Archer, as usual, was very steady, but could gain more advantage from free hits did he take them with less preparation. Richmond was the keystone binding the side together, and G. E. Clark played a steady and constructive game.

The game will be replayed on Wednesday, February 20th.

Result.—Guy's, 1 ; King's College Hospital, 1.

Team.—E. Gillet ; R. G. Archer, G. M. Turner ; C. F. Wright, A. G. Richmond (Capt.), G. E. Clarke ; C. A. Clarke, L. G. Morey, J. J. M. C. Jenkins, E. B. Rowe, J. B. Franklin.

Guy's v. R.N. and R.M., Chatham

THIS match was played on Saturday, February 2nd. The ground had dried out since the Cup-Tie three days before, but was, nevertheless, rather soft and cut up badly. The standard of play was rather below that usually set by the Hospital, a fact which can be attributed largely to the lack of opposition by the visiting forwards, and the lack of thrust in a weakened Hospital attack.

Winning the toss, Guy's played down a slight slope, and carried the ball into the opponents half, where it remained, with but momentary and easily cleared bursts by the Chatham wings and centre-forward. In spite of having an overwhelming share of the play, Guy's only led at half-time by one goal—a good flick shot by Morey at inside right.

In the second half the defence were always on top, Archer was very steady, and Thorne cleared hard and accurately. Franklin, at inside left, increased Guy's lead with a good shot after beating two men.

Result.—Guy's, 2 ; R.N. and R.M., Chatham, 0.

Team.—A. C. Greene ; R. G. Archer, T. C. Thorne ; C. F. Wright, A. G. Richmond (Capt.), G. E. Clarke ; C. H. Phillips, L. G. Morey, E. B. Rowe, J. B. Franklin, J. E. Elliott.

Guy's v. Ley's School

THIS match was played at Cambridge on Saturday, February 9th. A very fast game on a rather bumpy pitch ended in a defeat for Guy's by 6 goals to 3.

Throughout the first half Guy's were kept on the defensive, and the Hospital attack was far from convincing. At half-time the score was 2—0 for Ley's, and was a fair estimate of the run of the play. After half-time Ley's had the upper hand for a while, increasing their lead to 5—0 before Guy's replied with a goal by Franklin, and although Ley's scored again, Guy's gradually got on top of a defence that was beginning to

crack, and Richmond twice forced his way through to score with hard low drives.

In the defence C. F. Wright was prominent at right half, while Richmond, Archer, Parsons and Brown were all steady.

Result.—Guy's, 3; Ley's School, 6.

Team.—H. V. Brown; R. G. Archer, W. A. Parsons; C. F. Wright, A. G. Richmond (Capt.), C. J. McAllin; C. H. Phillips, L. G. Morey, J. J. M. C. Jenkins, E. B. Rowe, J. B. Franklin.

Hospital Information, etc.

Notice

THE LIGHT DEPARTMENT DANCE

ON Wednesday, January 30th, the Light Department held their Annual Dance at the New Burlington Galleries. As in previous years, it was very well patronised, and we were very pleased to note the presence of the Matron, Mr. and Mrs. Eason, Dr. and Mrs. Iredell, Mr. and Mrs. Carter Braine, and several past students of the Light Department. "A most enjoyable evening" was the unanimous verdict. It was also a success financially, and the proceeds will go to the purchase of a portable Diathermy machine, a long-wished-for piece of apparatus, so that the difficulty of treating ward patients unable to come to the Light Department will be overcome.

R. M. S.

Pass List

SOCIETY OF APOTHECARIES OF LONDON.
FINAL EXAMINATION.
January, 1935.
Medicine.
W. McC. Graves-Morris.

UNIVERSITY OF OXFORD.
Anatomy and Physiology.
O. I. Green.

ROYAL COLLEGE OF PHYSICIANS.
M.R.C.P.
January, 1935.
Cyril Astley Clarke.

Papers by Guy's Men

N. L. Eckhoff. Enormous goitre in a deaf-mute. *Ibid.*, 337 (Clin. Sect.).

T. T. Stamm. Osteochondritis dissecans. *Ibid.*, 339 (Clin. Sect.).

Maurice Sorsby. Temporosphenoidal abscess; pus in cerebrospinal fluid; drainage of abscess; recovery. *Ibid.*, 235 (Sect. Otol.).

P. M. F. Bishop, Frank Cook and A. C. Hampson. Indications for the clinical use of progestin. *Lancet*, 1935, i, 139.

H. C. Corry Mann and Sir F. Gowland Hopkins. An experiment in first-class protein. *Lancet*, 1935, i, 145.

E. C. Warner. Calcium metabolism. *Med. Press*, 1935. cxc, 55.

George W. Bray. Treatment in general practice: Asthma. *Brit. Med. Jour.*, 1935, i, 119.

C. S. Lane-Roberts. The dental care of the expectant mother. *Brit. Jour. Dent. Sc.*, 1935, p. 3.

P. M. Deville. The cerebro-spinal fluid in diseases of the nervous system. *Jour. Clin. Res.*, 1935, xxi, 5.

E. C. Warner. The diet of the nephritic. *Post-Grad. Med. Jour.*, 1935, xi, 83.

J. B. Parfitt. Difficulties in daily practice. *Brit. Dent. Jour.*, 1935, lviii, 97.

W. H. Ogilvie. Latent sepsis and its manifestations. *Practitioner*, 1935, cxxxiv, 179.

J. A. Ryle. The nature and relief of some common gastric syn ptoms. *Clin. Jour.*, 1935, lxiv, 48.

C. Lambrinudi. Deformities of the toes. *Ibid.*, 57.

E. P. Poulton and Argyll Campbell. Oxygen therapy. *Jour. Clin. Res.*, 1935, xxi, 1.

Appointment

H. L. Thorn, L.D.S., R.C.S., Eng., Hon. Consulting Dental Surgeon to the New Southend General Hospital.

Changes of Address

N. S. Plummer, M.D., M.R.C.P., 49, Harley Street, W.1. *Langham* 3475.

Sterrett G. Lattouff, Rue Chateaubriand, Beirut, Syria.

Births

LATTOUFF.—In London, to Mr. and Mrs. Lattouff (née Marjory Helen Drew, of 2, Avington Grove, S.E.20)—a daughter (Emylda Ann).

JAGO.—On February 4th, 1935, at Stafford House, Sutton, Surrey, to Mona (née Pethick List), wife of Maurice E. M. Jago, M.D., B.S. (Lond.)—a son.

Marriage

BARNARD.—On January 6th, 1935, at "Kingslea," Mulgrave Road, Sutton, to Elma (née Melville), wife of W. J. Barnard, "Ruthwell," Manor Road, Cheam—a daughter.

EDS. { D. P. K. / P. W. C.

Time Table for attendance of Patients in the Out-Patient Department.

N.B.—NEW Patients should not be sent to those Departments marked with an asterisk.

	Monday	*Tuesday*	*Wednesday*	*Thursday*	*Friday*	*Saturday*
Medical	Dr. Marshall 12.30 p.m.	Dr. Campbell 12.30 p.m.	Dr. Grant 9 a.m. Dr. Boland 12.30 p.m.	Dr. Conybeare 12.30 p.m.	Dr. Douthwaite 12.30 p.m.	Dr. Boland 9 a.m
Surgical .... **9 a.m.**	Mr. Eckhoff	Mr. Doherty	Mr. Grant Massie	Mr. Ogilvie	Mr. Eckhoff	Mr. Grant Massie
Children .... **9 a.m.**	Dr. Cameron	—	Dr. Hampson	—	Dr. Hampson	—
Skins	Dr. Barber 10 a.m.	—	Dr. Forman 9 a.m.	Dr. Barber 9 a.m.	—	—
***T. B. Dept.**	Dr. Marshall 5.30 p.m.	—	—	Dr. Marshall 1.30 p.m.	—	—
Orthopædics ..... **12.30 p.m.**	Mr. Stamm	—	*Plasters only 1.30 p.m.	Mr. Lambrinudi	—	—
Gynæcology ..... **12.30 p.m.**	Mr. Chapple	—	Mr. Cook	—	Mr. McNair	—
Nervous Diseases & Psychological Medicine	—	Dr. Symonds & Dr. Gillespie 9 a.m.	—	*Dr Gillespie 2 p.m. (For patients under 17)	Dr. Symonds & Dr. Gillespie 9 a.m.	—
Eyes .... **12.30 p.m.**	Mr. Law	Mr. Morgan	—	Mr. Law	Mr. Morgan	—
Ear, Nose and Throats	Mr. Layton 10 a.m.	Mr. Mollison 12.30 p.m.	—	Mr. Layton & Mr. Cann 12.30 p.m.	Mr. Mollison & Mr. Cann 12.30 p.m.	—
Genito-Urinary ..... **12.30 p.m.**	—	Mr. Thompson	—	—	Mr. Thompson	—
V.D. F. } Daily 9 a.m. to 8 p.m. **V.D. M.** }	—	Miss Rawlins 9 to 11 a.m.	Miss Rawlins 2 to 4 p.m.	Miss Rawlins 6 to 8 p.m.	—	—
		—	Mr. Lloyd 9 a.m. to 1 p.m.	Mr. Lloyd 5 to 8 p.m.	Mr. Lloyd 9 a.m. to 1 p.m.	—
***Defective Speech**	—	—	—	—	Mr. St. John Rumsey 1 p.m.	—
Dental .... **9 a.m.**	Mr. Bulleid	Mr. Malleson	Mr. Pritchard	Mr. Dowsett	Mr. Doubleday	Mr. Kelsey Fry
				Mr. Bull (Children)		
	Mr Hooper 2 p.m.	Mr. Messenger 2 p.m.		Mr. Hooper 2 p.m.	Mr. Messenger 2 p.m.	

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

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PASSIM

WE are in politics. Before us is a letter to their Member of Parliament signed by sixty-one doctors living in the St. Marylebone electorate, of which nearly a third are on the visiting staff of this Hospital. A group of doctors advocating a cause not directly concerning their profession is something uncommon in the political arena. The letter is an expression of the view of an influential section of the electorate on the Peace Ballot, which is being conducted by local councils for the National Declaration on the League of Nations and Armaments; it calls the attention of the member for St. Marylebone to this Ballot and expresses views upon it.

Sooner or later we ourselves shall be called upon to consider the circular, and it is now time to think what our answers to the questions shall be. The ballot has been promoted as a propagandist weapon to combat the isolationist press. The promoters believe that it will reveal an enormous majority in the country in favour of the League of Nations and its work. For this purpose all electorates are being circularised by their local councils and it is expected that the unanimity of opinion expressed will greatly strengthen the hand of the Government with regard to Geneva, and make such hesitation as was shown in connection with the Saar unlikely to recur.

There are five questions, the replies to which are not easily given as direct affirmatives or negatives. The first question, as to whether England should remain in the League is the most easily answered directly, and it is likely that the balance of opinion will be on the affirmative side.

The reply to questions concerning the desirability of a general reduction of armaments and the Government control of their manufacture is more complicated and subject to many qualifications, and must be influenced by actual experience of the difficulties encountered in dealing with Government concerns as contrasted with private firms. The detailed knowledge that is needed to gauge the amount of disarmament which would still leave sufficient forces for the policing of the Empire, or of world powers other than our own, is not at the disposal of any average member of the community, who is in no position to decide whether or not such armaments are already at a minimum for this purpose. Further, we have no guarantee that a government monopoly of armaments would not leave us with the same astounding inability to meet the situation as was shown by the government War Department in the Great War.

But the question that is considered most important by the sixty-one signatories of the letter to the Member for St. Marylebone is the fifth: "Do you consider that if a nation insists on attacking another, the other nations should combine to compel it to stop by:—

(*a*) Economic and non-military measures?

(*b*) If necessary, military measures?"

The signatories definitely commit themselves to the answer "Yes" to both (*a*) and (*b*), on the grounds that 'action in agreement with other nations to curb one who runs amok is the only way to ensure peace,' and that 'this nation has its own contribution to make to world peace and treaty obligations,' and that 'in any case we should soon be drawn in, as America was in the last war.' They base their answer on the further ground that they are fulfilling a duty owed to posterity.

Those who direct our medical studies have committed themselves with a certainty of which we may be a little envious. The question seems such a vast one, and the situations that may arise so impossible to prognosticate without an intensive study and detailed knowledge of world politics, that any definite guarantee to act on these lines or those must be premature. It is an open question whether we should act in accordance with our commitments if any such situation did arise. It will be remembered that in the trouble between China and Japan the League of Nations was pledged, having given an anti-Japanese verdict, to intervene on behalf of China. Nothing of the kind was done, and it seems likely that this is a presage of what may happen in the future. We may well ask, if these guarantees are to be made and so lightly tossed aside, what is the virtue in committing ourselves to agreements which may be dishonoured when the urgency arises ?

Indeed the whole value of the Peace Ballot may well be questioned. " What, in the name of God," said Augustine Birrell, " has the British Public to do with Literature ? " and one feels the same helplessness with regard to the higher spheres of political activity. We doubt if so simple an expression of views on war can really express public opinion, and further, if the value of that opinion is not having, perhaps, too great a stress laid upon it.

We feel that it is probable the more reasoned the thought expended on the ballot, the less likely are its questions to be answered, and the more likely is it to be committed to the flames. We are not in favour of war in any form or between any countries, but we don't think that the Peace Ballot will do anything to prevent a war arising. A war is fought with passions set aflame, and when they are aroused treaties, obligations and Peace Ballots are forgotten.

▭

We were delighted to learn the other day that Sir Cooper Perry has been appointed Chairman for the year 1935 of the Board of Management of the London School of Hygiene and Tropical Medicine.

Another member of the Consulting Staff, Mr. C. H. Golding-Bird, has distinguished himself in the field of literature. He has written " The History of Meopham " in such a way that it may well be described as the ideal parish history, so crammed full is it of interesting information.

▭

In the following pages will be found an account of the Residents' Play, which was held a fortnight ago. A piano record of the music played by C. de Gruchy and K. L. Scott can be obtained for the price of 2*s*. 6*d*. at either the Guy's Shop or the Counting House. Owing to the insistent demands of many Guy's people, a re-issue of the 1933 record has been made, and this also can be obtained for the same pirce.

▭

On the evening of Monday, March 4th, the United Hospitals' Annual Boxing Competition will take place at the Blackfriars Ring. Tickets may be obtained from the Medical School Office.

The evening offers very good entertainment, and the bouts, if marked more by enthusiasm than skill, are the better spectacle because of it. Partisan feelings at the ringside tend to run high and seek raucous expression. It is wrong, however, to think that the behaviour of a large section of the crowd affects the competitors. They are much too concerned in getting the business at hand over, and with the thought that, if successful, they may have to appear up to four times in the course of this Roman holiday.

Though for some years no considerable success has attended the efforts of the Hospital—in 1933 we were equal second when Bart.'s broke the long run of St. Thomas's successes—it is hoped that this year we shall at least have a full team, and those members of the Hospital who attend will have a Guy's representative to support at every weight.

▭

We wish to remind our readers that the Residents' Ball will be held at Grosvenor House on March 22nd. Tickets are £1 1*s*. each and include supper and a running buffet. The number of tickets is limited by the size of the dance floor, and we strongly advise those who hope to obtain them to apply as soon as possible to the President of the Residents. Lady Shipway has very kindly consented to act as hostess for the evening.

▭

The College authorities have denied any responsibility for the loss of articles of clothing from the coat pegs in the corridors. We have never suspected the College authorities of being concerned in the thefts, but we hope that the notice, in a neat black frame hung all by itself on an otherwise blank wall, does not represent their maximum effort to deal with such an unfortunate problem.

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The Editor will, at all times, be glad to consider articles or sketches, provided that they are accompanied by the writer's name and address, not necessarily for publication. Authors who desire reprints of their papers should make their own arrangements with the Printers when they return their proofs. All contributions to be addressed to *The Editor*, who does not accept responsibility for the views expressed by contributors

Ocular Injuries and Emergencies

By Frank W. Law, Esq., M.D., F.R.C.S.

INJURIES to the globe may be considered under the following headings :—

1. Damage from caustics.
2. Burns.
3. Damage by foreign bodies.
4. Contusions.
5. Wounds, which may be subdivided into non-perforating and perforating.

If one accepts, as a definition of the term emergency, a condition of the eye which is likely to benefit from immediate treatment and of which the prognosis is made considerably worse by delay in treatment, then under the heading of emergencies one adds to the list of injuries detailed above the conditions of acute glaucoma, corneal ulceration, and embolism of the central artery of the retina. It is admittedly true that any disease or disorder demands treatment as soon as possible, and this, in the realm of ophthalmology, is more than ever true of detachment of the retina; but on account of the fact that a delay of a day or two actually makes very little difference in prognosis, and also because of the magnitude of the subject, now that operative treatment is so well (and justly) established, this condition will not receive attention in this communication.

I.—DAMAGE FROM CAUSTICS

Damage to the globe by caustics, which are most often in a fluid state, usually comes about in the course of the patient's occupation, when this entails the handling of such bodies as strong acids or alkalis. Hot water and steam are rarely the agents; a not infrequent cause is the entry into the eye of certain depilatory agents, which have a particularly destructive effect on the cornea. There would also appear to be some specific potentiality for damage in lime, or any compound containing calcium; injury from this cause is more than usually serious, and difficult to deal with. Similarly, damage due to strong ammonia deserves the most careful and prolonged treatment.

The damage caused by caustics is of a twofold nature—immediate and remote. An active caustic burn of the cornea or conjunctiva may in itself be destructive, and cause necrosis of the tissues; as a result loss of vision ensues from the infiltration and scarring which follow the corneal burn. An equally serious source of damage is the adhesion, which may form during the healing process, between the lids and the globe, giving rise to the condition called symblepharon; this may result in disfigurement, loss of vision, and limitation of movement, or even practical immobilisation of the globe.

In the treatment of such trauma the first necessity is to remove the excess of material which may remain in the conjunctival fornices or on the globe. Immediate irrigation is carried out in the most thorough manner, care being taken fully to evert the upper lid, since material frequently lurks there and would escape removal if not specially looked for. Though the nature of the irrigating fluid, with one or two exceptions, is not of vast importance, it is prudent on first principles to use weak acids such as boric 2 per cent. in cases where the action of alkali is to be combated, and weak alkalis, such as sod. bicarb. 2 per cent. when an acid is the damaging element. If the nature of the corrosive fluid is not known, physiological saline solution is as good as any other. An exception to this rule is found in the case of damage by lime, whether solid or liquid; here a 10 per cent. solution of neutral ammonium tartrate is the most beneficial agent that can be used. If the caustic were in solid form, a drop of cocaine should be instilled into the eye, and every particle meticulously removed with blunt forceps, after which irrigation should then be repeated.

After this preliminary treatment, fluorescine should be instilled, and the surface of the globe and lids carefully examined, to determine what area, if any, has been denuded of epithelium. This is important not only for this examination, but a similar procedure at subsequent treatments enables one to gauge the speed and extent of healing by the relative size of the staining area. If the cornea has suffered extensive damage, it is advisable to instil a mydriatic in the form of atropine solution, 1 per cent.; this may be in oily solution, or, better, parolein is freely instilled. Some consider that the liberal application by means of a glass rod into the fornices of vaseline or boracic oitment is a more effective method of preventing symblepharon—for, apart from securing healing of the damaged area, this is the most important object in treatment. In the case of a severe caustic burn prevention of symblepharon is a very difficult matter; but the difficulty in no way compares with that of the attempt to alleviate the established condition by means of a plastic operation upon the conjunctiva.

Treatment is, therefore, assiduous in order to avert the complication of symblepharon. Ankyloblepharon, or adhesion of the lids to each other, is a very rare complication. The fornices are kept

thoroughly lubricated by parolein or vaseline daily; if necessary, in severe cases, a piece of material such as linen, impregnated with vaseline, may be inserted into the fornix, and the lids bandaged over it. Any burn of the skin of the lids receives, of course, the usual attention for a caustic burn of the skin. It is not unknown for subsequent scarring to cause such inversion of the lid as to give rise to the condition of trichiasis, or rubbing of the lashes on the globe—a troublesome condition which demands either destruction of the lashes by electrolysis or, if severe, a plastic operation.

II.—BURNS

The commonest cause of an actual burn of the conjunctiva or cornea by a hot body is the touching of the eye of a woman by a curling iron. This is rarely severe, the protective reflex being adequate to prevent gross damage; and since the offending instrument is usually sterile, healing is rapid. The eye should be irrigated to render the conjunctival sac clean, and the usual treatment in the form of lubrication adopted. Pain is often severe in any of these cases, and should be met by general measures.

III.—DAMAGE BY FOREIGN BODIES

The presence of a foreign body under the lid or upon the globe is a very frequent source of irritation and discomfort. The variation in the amount of reaction to an embedded foreign body is remarkable; in some cases the patient arrives within a few minutes of its reception with a very painful, red and watering eye; in others a large foreign body is discovered upon the cornea in the course of the usual routine examination, the patient being unaware of its presence.

It is rarely that ordinary dust blowing into the eyes compels the patient to seek medical aid; the reflex lacrymation engendered is usually sufficient to wash the debris into the region of the inner canthus, or onwards down the lacrymal drainage paths. A piece of grit, however, or a particle of steel or emery dust may resist this stream, and either become embedded in the cornea or bulbar conjunctiva or come to rest beneath either lid—usually in the upper subtarsal sulcus, which is a narrow groove, parallel with the lid margin, about a quarter of the way up the conjunctival surface of the lid.

Should the foreign body have struck the globe forcibly it may become embedded at once, in which case pain is generally immediate and severe. Alternatively, it may penetrate the coats of the globe and assume an intra-ocular position, or pass through and remain in the orbital tissues; such an eventuality arises most commonly in the case of a workman using a hammer and sett on substances such as brickwork or concrete.

A patient frequently complains of "something in the eye" when this is not really the cause of the discomfort; similarly, a sore eye is complained of, and no history given, when the cause is a foreign body. An examination for this cause, therefore, is always indicated in casualty work, but the discovery of a foreign body is not always easy. A search is first made in the lower fornix; then the upper lid is everted and the conjunctival surface of lid and globe examined. The cornea is then examined, with the aid of a magnifier if necessary; a drop of fluorescine in the eye is of great assistance in this search. Finally, guided by the history, signs of penetrating damage are looked for—and these are not infrequently far less obvious than the inexperienced would suppose. Should there be a corneal, corneo-sclera, or conjunctivo-scleral wound, a hole in the iris, or a wound of the lens, the diagnosis is already made of perforating injury—whether due to retained foreign body or not remains to be decided. Should the foreign body have been of so great a size that the globe is severely disorganised, no difficulty is encountered, but it may happen that entry to the globe, through the conjunctiva and sclera especially, caused so little external damage that the most careful examination fails to arrive at the correct diagnosis.

With regard to treatment, foreign bodies under either lid should be removed by a pledget of damp cotton-wool; an endeavour should be made to wipe a foreign body off the cornea, after cocainisation in a similar way. If this fails, a blunt instrument such as a spud should be used; lastly, a sharp ophthalmic needle (such as Bowman's) may be necessary to dig the foreign body from the cornea. If the foreign body is suspected of being very deeply embedded, its depth should be estimated by means of the slit lamp, and great caution exercised to avoid perforation of the cornea in the attempted removal, if the foreign body is deep. During the process of removal, the eye must be well illuminated, and the patient coached to co-operate by fixing a suitably placed object with the other eye, which *must remain open.* Failure on the patient's part to keep the eye under treatment still is almost invariably due to his forgetting to keep the other eye open.

Foreign bodies in the conjunctiva, if not merely lying on the surface, are sometimes rather difficult to remove on account of the laxity of this membrane. They may be picked off with forceps, or it may be necessary to pick up the foreign body and conjunctiva and snip both away with scissors; unless a large area is thus removed a suture is

rarely necessary afterwards. Deeply embedded conjunctival foreign bodies which have been there a long time are best left alone in most cases; subconjunctival foreign bodies embedded in the sclera need careful removal, usually under theatre conditions, since a conjunctival flap should be raised, and vitreous loss may follow the withdrawal of the foreign body should this have perforated.

The entry of a foreign body into the globe is a serious event and may result in loss of the eye and danger to the fellow eye; as such it is deserving of the utmost respect and the prognosis should be guarded. It is an advantage to localise the foreign body before attempting removal, though this cannot always be done clinically; localisation by means of X-rays should be carried out—a highly technical and very nice procedure—and a careful fundus examination made in an effort to localise it visually. The removal of a non-magnetisable intra-ocular foreign body may be a matter of extreme difficulty, and does not demand discussion here; if the foreign body is magnetisable its removal is usually simpler and is accomplished by means of the magnet, the technical details of which are similarly without the scope of this paper. Suffice it to say that, in general attempts at the removal of an intra-ocular foreign body should always be made; there are only very rare exceptions to this rule.

Perforating foreign bodies, whether retained or not, may give rise to the two obvious complications of intra-ocular hæmorrhage and intra-ocular infection; sympathetic ophthalmia is also an ever-present possibility, a few details of which will be discussed later. A less well known complication of a retained iron foreign body is the occurrence of siderosis—a condition in which the iron, dissolved by tissue fluids and elaborated into a chemical form of which the nature is so far unknown, is deposited in the form of brownish granules in various parts of the eye. Degenerative changes follow, causing destruction of vision.

IV.—CONTUSIONS

The damage caused by a contusion of the globe by a blunt instrument may be, according to the severity of the injury, anything from a simple abrasion to a ruptured globe. It is often surprising what little sign of damage is to be found in an eye after what is described as a serious accident, and what far-reaching effects on vision an apparently trivial trauma may cause. It is impossible to forecast with any certainty the ultimate effect on vision of a contusion or laceration of the globe, unless this be of the very simplest variety.

In the case of a suspected corneal abrasion a drop of fluorescine should be instilled into the eye and any solution of continuity of the epithelium carefully looked for. Should this be found, the essentials are to render the surroundings as clean as possible and to prevent the lid from rubbing over the abraded surface. To this end the conjunctival sac is irrigated, and the lacrymal sac examined to eliminate the possibility of the presence of a mucocele; should this be found, one must at least wash the sac clean. Parolein, or some inert oily substance of that nature, is then instilled into the eye, and a pad and bandage applied. The danger in such a case is for the area to become infected and a corneal ulcer to arise; should this appear to be at all likely the pupil must be dilated with atropine and the canaculi obliterated by cautery or the lachrymal sac excised. It should be noted, however, that in all cases the use of atropine in adults is attended by potential danger in that it may cause a rise of tension in an eye predisposed to glaucoma; *no middle-aged or elderly person with a shallow anterior chamber should have a mydriatic prescribed for home use, or at least not without warning of the danger, in such cases.*

Corneal abrasions may occasionally recur in a most exasperating manner; this is the more likely to happen when the original lesion was caused by a finger nail. Measures such as scraping and carbolising, mild X-rays, and many others have been advocated for this condition; I have found the local application of ultra-violet light to be practically infallible.

Contusion of the globe may cause an effusion of blood into the anterior chamber (hyphæma); this is not in itself a serious matter, as absorption is usually rapid and complete, but the possible sequela of blood-staining of the cornea is far more serious; this is usually the result of a combination of hyphæma and raised tension, and, though clearing is generally complete or nearly so, the process may take years. A similar occurrence behind the lens—hæmorrhage into the vitreous—is always of more serious import, as absorption is rarely complete, and organisation may occur, giving rise in time to the so-called retinitis proliferans, with its possible complication of detached retina.

The results of contusion on the iris may vary very considerably. Frequently a traumatic mydriasis follows, from which recovery may never be complete; all degrees of laceration of the pupillary margin of the iris are met with, though these are not common. A separation of the iris from the ciliary body, or iridodialysis, is more often met with; this may be accompanied by a folding of the iris forwards or backwards—anteflexion or retroflexion; rarely the iris is completely

torn away from its attachment, and sinks to the bottom of the chamber. In all cases of injury to the iris except radial tears it is advisable to instil atropine and to keep the patient at rest in bed, especially when intra-ocular hæmorrhage has occurred.

The changes in the lens which may follow contusion are concussion cataract and dislocation. Although opacification most frequently follows a rupture of the lens capsule, by allowing access of intra-ocular fluid to the lens fibres it may occur with an intact capsule; probably this is due to a nutritional disturbance secondary to damage of the ciliary body. In dislocation, the primary injury is that of rupture of the suspensary ligament; if this is partial the dislocation is partial also (subluxation), and is often difficult to diagnose, perhaps the only signs being a slight inequality in the depth of the anterior chamber at different places and a tremulousness of the unsupported portion of the iris (iridodonesis). In total dislocation the lens may very rarely enter the anterior chamber; more commonly dislocation occurs posteriorly and the lens sinks to the bottom of the vitreous. The partially dislocated lens needs no treatment unless it causes a complication such as glaucoma; in this case operative relief of tension is indicated, but in that of total dislocation forwards removal of the lens becomes imperative. It is a very difficult procedure attended by considerable danger, as loss of vitreous almost always occurs.

The choroid may be ruptured by a contusion. The rupture is seen as a white streak, on account of the visibility of the underlying sclerotic, and is usually concentric with the disc margin and fairly close to it. It is only when the rupture occurs at or near the macula that disturbance of vision follows. The patient should be kept at rest in bed until absorption of the blood, extravasated as a consequence of the rupture, has occurred.

Rupture of the retina is a rare condition. Hæmorrhages following contusion are more common; a more frequent disturbance is that referred to as *commotio retinæ*, which is probably due to œdema, and is seen ophthalmoscopally as a cloudiness of the retina, usually widespread. Visual recovery is as a rule complete; this is, however, not so if macular disturbance has followed the contusion. Such disturbances may manifest themselves in many forms, of which the commonest are hæmorrhage, pigmentary change, and " hole " at the macula—a condition probably consequent upon cystic degeneration following œdema. Finally, the retina may become detached after contusion; this may occur at varying intervals after the injury, and demands immediate operative interference.

A serious result of contusion by a blunt instrument is rupture of the globe. This usually occurs as a result of compression of the globe against the orbital wall; the globe gives way at its weakest part, just outside the limbus, and the rupture is concentric with this structure. Serious concomitant intra-ocular damage may occur, such as dislocation of the lens and iridodialsis, and hyphæma is common; often nothing remains but to excise the eye. In less serious cases it is possible to save the eye, though vision is usually severely affected.

Should the lens be dislocated so as to lie beneath the conjunctiva it is best left there, at least temporarily, since its attempted removal may result in considerable vitreous loss. It is seldom that suture of the sclerotic is indicated; the best treatment consists in the instillation of atropine, and rest; healing occurs often with surprising readiness, and a reasonably useful eye my result. Should there be a prolapse of uveal tissue, this should be excised and the conjunctiva sutured over the rent. Any operative interference should be conducted with the utmost care, since undue disturbance tends to the further loss of intra-ocular contents.

V.—WOUNDS OF THE EYEBALL

Wounds of the eye are satisfactorily divided into non-perforating and perforating. In any case of wound of the globe by a sharp instrument the lids are liable to be lacerated; if this occurs, treatment by suture is usually fairly simple. Should the whole thickness of the lid be involved it is advisable to insert conjunctival sutures as well, in order to ensure that the lid is restored as nearly as possible to its former condition after healing.

Conjunctival wounds of the globe must be carefully investigated in order to make certain that no scleral perforation has occurred, for if such has happened the prognosis is, of course, gravely altered. The globe is irrigated with boric lotion or acriflavine, and the conjunctiva sutured with silk; healing usually occurs very rapidly.

Perforating wounds of the globe divide themselves into those of the cornea, sclera, and corneo-scleral junction. A perforating corneal wound is usually linear, and may be complicated by a prolapse of the iris. To determine the presence or absence of this complication one must note the depth of the anterior chamber and the shape of the pupil—for if the iris has been swept into the wound with the outrush of aqueous, there must be some resultant distortion of the pupil. The penetration may have been deep enough to injure

the lens, in which case the outlook is rendered still more serious by the occurrence of a traumatic cataract. Any prolapse of iris tissue must be excised and not replaced, and the greatest care taken to ensure that no adhesion of the iris to the wound remains. The eye is then atropinized and tied up, and the patient kept strictly at rest for at least a week. If the lens has been wounded the access of aqueous to this structure causes the fibres to swell, and lens matter comes forward into the anterior chamber; should this cause occlusion of the filtration angle a rise in tension may result, in which case the lens matter must be allowed exit (curette evacuation).

In the case of a large or lacerated corneal wound it is often of considerable value, after the excision of the prolapse which almost certainly will have occurred, to cover the wound with a flap of conjunctiva. This membrane is raised from the limbus, and freed from the globe by undercutting; it is then drawn across and secured by sutures so that the cornea is temporarily partly or even completely covered by the flap. The sutures generally cut out in a few days, by which time healing has occurred.

Perforating wounds of the sclera are accompanied by the loss of more or less vitreous, and if this is excessive shrinkage of the globe is likely to occur. It is rarely necessary to attempt scleral suture—a difficult and delicate procedure which may easily result in the further loss of vitreous. It is sufficient to suture the conjunctival wound and to keep the eye completely at rest in order to permit of healing under the best possible conditions. One golden rule in dealing with suspected scleral wounds is to refrain from testing the tension of the globe—for although it may help in diagnosis it will almost certainly cause more intra-ocular contents to be extruded in cases where perforation has occurred.

Wounds of the cornea-scleral junction are more difficult than others to deal with, and are more liable to set up sympathetic ophthalmia. Prolapse of the ciliary body must be excised, but it is far from easy to ensure permanent disentanglement from the wound; the proximity of the vitreous renders intra-ocular infection more likely. It is in gaping limbal wounds that the conjunctival flap proves most valuable.

The serious complications of perforating wounds of the globe are sympathetic ophthalmia and panophthalmitis. The latter is the more likely to occur if a direct path for infection to the vitreous has been opened up; evisceration of the globe is usually necessary, enucleation being avoided on account of the danger of opening up the meningeal sheaths through section of the optic nerve. Sympathetic ophthalmia is a dreaded complication of which the pathology is still quite obscure; it is impossible to discuss the matter here at all adequately. Inflammation of the other eye has been reported at intervals varying from a few weeks to many years after the injury. Iridocyclitis occurs in the injured eye, and if at all persistent should be regarded as an indication for excision; if a similar condition shows signs of developing in the second or sympathising eye it is often a matter of extreme difficulty to decide whether excision of the exciting eye will benefit matters—for sometimes the original eye is eventually the more useful member of the two. It is safe to assume that sympathetic ophthalmia never occurs after excision, if no signs of its presence were visible before. In cases where the condition is threatened and excision is decided against, treatment consists in that of iridocyclitis in general, together with mercurial inunctions or Salvarsan injections.

Perforating injuries of the orbit may have direct or indirect consequences. Direct damage may be done to the optic nerve, or ocular muscles; or these may be involved in hæmorrhage or exudate, which may later cause interference with movement or with vision by strangulation after organisation and subsequent contraction. If the causative foreign body is not sterile, orbital cellulitis may ensue, which demands active treatment by local heat, and early incision if suppuration results. Fractures of the skull-base may involve the orbital foramen; the optic nerve may be directly injured, or interference with vision may ensue through optic atrophy consequent upon compression by clot.

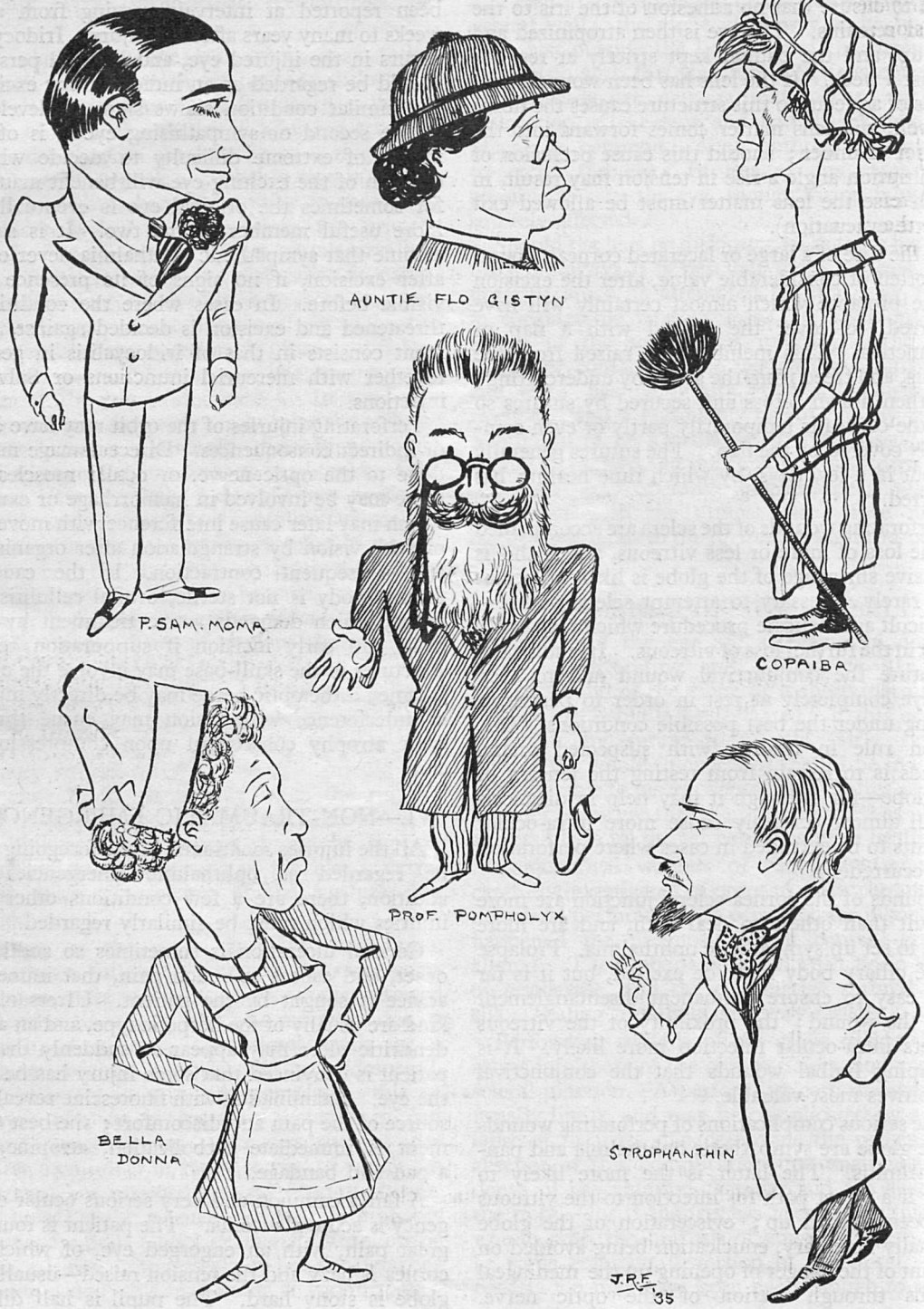
VI.—NON-TRAUMATIC EMERGENCIES

All the injuries mentioned in the foregoing must be regarded as ophthalmic emergencies; in addition, there are a few conditions other than injuries which must be similarly regarded.

Corneal ulceration is sometimes so sudden in onset, and causes so much pain, that immediate advice is sought by the patient. Ulcers of this kind are usually of the herpetic type, and an actual dendritic ulcer may appear so suddenly that the patient is convinced that some injury has befallen the eye. Examination with fluorescine reveals the source of the pain and discomfort; the best treatment is immediate carbolization, atropine, and a pad and bandage.

A fairly common and very serious ocular emergency is acute glaucoma. The patient is found in great pain, with an engorged eye, of which the cornea is hazy and the tension raised—usually the globe is stony hard. The pupil is half dilated,

Seen at the Residents' Play



oval, and inactive or very feebly active; pain may be so severe as to cause vomiting. The first essential in treatment is to secure a fall in tension at the earliest possible moment, as delay may cause permanent damage to the optic nerve, with loss of vision; this fall is usually best achieved by the instillation of eserine, 1 per cent., every fifteen minutes, the application of two leeches to the temple, and hot bathings to the eye. Relief of pain and tension is often dramatically achieved by means of the diathermy current; this is applied by special electrodes for ten to fifteen minutes, at a strength of some 400-600 milliamperes, according to the degree of heat which the patient will stand. It must not be thought that the case is settled when the acute attack has been successfully dealt with by the above measures; even if operation in the acute stage is avoided—and this is not always the case, though it is the ideal at which to aim—operation is usually necessary to render the eye safe for the future both from the insidious damage of chronic glaucoma and from recurrence of the acute attack.

Embolism of the central artery of the retina must be regarded as an emergency, since active treatment at once may save a considerable amount of vision. The retinal anæmia causes sudden blindness, and if ophthalmoscopical examination is made at once—a rare possibility—the arteries are seen to be much reduced in size, the smaller ones being quite invisible. In a short time the retina becomes opaque through œdema, the lack of this at the thinnest part—the macula—causing the structure to appear bright red by comparison. The blockage may not be complete, in which case some movement of blood may be visible in the vessels, sometimes in a reversed direction to the normal.

Treatment is only valuable if available at once, and is directed towards encouraging movement of the clot into a less important branch of the vessel. To this end, massage of the globe should be performed; if no result ensues paracentesis of the cornea is carried out, the lowering of intra-ocular tension thus caused being sometimes instrumental in moving the clot on account of the temporary withdrawal of support from the arterial wall. Unless the case is seen, however, within a very few hours of the occurrence of embolism, any treatment is bound to be unavailing.

The Residents' Play

"THE PROFESSOR DIES" *or* "BACK TO THE PRAM"

HAPPY the critic in his padded stall well dined, well wined, with large cigar, enjoying the glittering scene. With all the wisdom and beauty of Guy's around him in the stalls and all the wit and talent swimming before him on the stage, he sits in a roseate haze all unmindful of a chill to-morrow.

In a mellow trance he leaves the theatre and walks into the grisly dawn where the last dulcet tones of Bella Donna's dying fall give place to the strident screams of copy-hunters demanding that he transmute his treasured dreams to printer's ink. See him sitting in the theatre in the pitiless light of fourteen days, with the cold, unpadded stone eating into his aching spine, vainly striving with tight shut lids to conjure up the vanished glories of departed nights.

Where all is praise, how shall I start? Shall I praise the wit and inventiveness of Bishop and Reading, their smooth organisation and clever production? Shall I exalt the inspiration and execution of de Gruchy's music and his playing with Scott? The excellence of the staging by the Brothers Harker, or of Hogbin's lighting? Shall I raise a pæan for Bolton's filming, for Doherty's heroic verve and sartorial magnificence, for Rowland's matchless beauty and tunefulness, for Nicolai's skilled restraint and unforgettable singing? Shall I intone a *Te Deum* for Howell's brilliant performance as the Scientist or Jacoby's dashing study of the hirsute Professor and many other parts, or of Fowler as the most odoriferous of the Schmellie brothers? Shall I paint with saccharine pen the sinuous attractions of Sister Tutor Blumenthal or the massive grace of Geidt as the ruminating pro., or the fulminating matriarch; the beautiful but dumb charm of King (blame the author), or the fascination of Blazeby and McArthur as Sisters or Brothers? Shall I raise a more than brazen memorial to the brilliant impersonations of Whitteridge as C. Putnam Sherlock, or of Mackenzie as his faithful Shamble, or of Wass as a clever, if somewhat gloomy, Dean, or of Soper's cheerful and popular study of a well-known and popular person?

Shall I acclaim the skilful dispensing of Lees behind the scenes, the nimble spotlights of Baker and Westwood, the skilful painting of Farmer, the clever wigs of Fox, the elegant gowns of Madame Shepherd, the hard work and organisation of Yes-Men Cameron, Kark, Hallam and Watson, or the film-operating skill of Ireland with his well-timed "ja"?

I shall not mention any of these things, since, in the words of the Bard appropriate to this buskined theme, " If it be true that good wine needs no bush, 'tis true that a good play needs no epilogue."

The curtain rose upon a blasted heath; the gaunt skeleton of Nuffield House black against the midnight sky. Enter the four weird brothers. Their whispered conclave is interrupted by the entry of Strophanthin (Howell), who to all appearance works somewhere hidden in the hospital disguised as Mr. Augustus John. The mysterious four announce themselves to the surprised Research Worker.

THE GHOST SONG

(Lyric by P. V. Reading and P. M. F. Bishop)

When a ghost instead
Of his earthy bed
Decides to take the air;
His pleasures grim
Are dear to him,
So mortal men beware.
With a grisly beat
Of his scarecrow feet
He'll dance the night away.
For ghosts have their pleasures and they delight
To dance the night away.

While the corpse is a-creaking in his coffin,
Keeping time to the swaying girders' wail,
Then there's sinister work in the offing,
To the moan of the North-East gale.
The ghosts are abroad to-night—be careful,
And pity the mortals' plight.
Behold these ghoulish relics of Guy's,
The ghosts are abroad to-night.

When the graveyards yawn,
With a screech forlorn
The spectral figures rise,
And they crack their bones
With unearthly groans
As they soar into the skies.
But as dawning breaks
And each mortal wakes
We scurry back again.
Each ghost to his mouldering tomb returns,
Intoning this refrain.

Strophanthin is mildly impressed, and the first Spirit of the Plague Pit (Fowler), offers to grant any request of his—at a price! Strophanthin reveals to the rising emotion of the audience that he is on the point of discovering Rejuvenin, a magic hormone containing the secret of Youth, but one imperfection remains, and Time is precious, for over in the U.S.A. the Four Schmellie Brothers are working night and day to discover the secret first, and, worse than this, Professor Cheiro Pompholyx, of Sarajevo, claims to have discovered it already, and before another sun has set he will deliver a lecture on his secret in this very hospital. " Unless he is prevented," hisses the pestilential Spirit, " and if I help you to be the first to publish the formula, will you give me your soul?" " I will," gasps Strophanthin as a chill wind rises and shakes the girders of the grim skeleton behind him, and the curtain falls to rise next morning (no reflection on the scene-shifters) and reveals Sister Tutor (Blumenthal) gambolling with her Lambs (King, Rowlands, Nicolai and Geidt).

NURSES' SONG

(Lyric by P. M. F. Bishop)

We're four little lambs, and our minds are so pure,
Round dear Sister Tutor we cluster.
Our aim and ambition's to seem so demure,
Impassive, and never to fluster.
We're prim and we're proper; we're shy and subdued,
With Matron's advice and instructions imbued,
And Millicent Ashdown's great work we've reviewed.
Our morals and manners we've changed or renewed;
Our speech has been purged of its dashes and damns.
We're ladies . . . we're lambs.

The Dean of the Medical School—T.B. J.
My manner is gruff and official;
But once I'm at Huntercombe, see me display
A bearing that's not so judicial
They're all very frightened when sent to the Dean.
There's little escapes him and much he has seen.
Committees he graces, and plays go-between.
He wasn't born yesterday—cunning old bean.
And most people find that I say what I mean.
I'm Johnnie . . . the Dean.

The Dean (Wass) entered, to be photographed in the centre of the group, and takes his departure leaving the stage to Bella Donna, a perpetual probationer (Nicolai) and Polly Saccharide, a beautiful, if heartless, nurse (Rowlands). They reveal their love for Strophanthin and deride each other's charms.

DUET—BELLA AND POLLY

(Lyric by Charles de Gruchy)

Bella—
You may think that no man can resist you;
I take a different view.
Flaunting youth and beauty won't assist you,
While experience shows me what to do.
You are sowing your wild oats, mine are reaped and bound.
For every move upon the board, I know two underground.

Age has a stately grace,
A charm shown in her noble face.
My love is a bond strong and secure.
Passion's a fleeting thing,
A swift glance from a bird a-wing.
True love only comes when one's mature.
There's comfort in the winter time
Spring can never show.
Two loving hearts can intertwine
When you are forty as when you're young and naughty.
What though your years are few,
My ripe knowledge will conquer you.
Tact, sympathy, love, these shall endure.

Polly—
There's no menace in your competition.
I have too great a start.
I should be ashamed in your position
Of trying to ensnare Strophanthin's heart.
You may colour hair and lips, yet the fact is true,
That twenty is a better time for love than forty-two.
Bright eyes and graceful hips;
Who needs paint on these coral lips?
One kiss and the man's doomed to his fate.
Soft hair and ankles trim,
A form rounded but also slim.
What more can a man ask of his mate?
Spring's season brings the sunny hours;
Winter's cold and grey.
In youth are centred magic powers.
When you are twenty enjoyment's yours in plenty.
Mutton that's dressed as lamb
Is soon found to be only sham.
When youth is once past, love will not wait.

After this elegant exchange of amenities Strophanthin enters accompanied by Sam Moma (Doherty), whose gorgeous raiment at once proclaims his heroic cast. The two rivals fight over the reluctant Strophanthin, to the surprise and voluble horror of Sam, whose honourable attentions to Polly have twelve times been rejected. The harassed research worker tries to explain that his soul is not his own, when howling winds proclaim the minatory arrival of the Pest, who explains that he is not free to disclose his contract.

Strophanthin's pallor, the green lights, the howling blast suggest to his rival lovers and to Sam that all is not well, and Strophanthin, to avoid disobeying the ghostly injunction, tells them how Professor Pompholyx's lecture will shatter his ambitions"—unless he should be prevented," says Bella Donna, looking every syllable of her name (*exit left*). "Unless he should be prevented," says Polly Saccharide (*exit right*). "Unless he should be prevented," says Strophanthin (*centre*).

Ah ha, the plot thickens, but here comes the Dean and the beautiful Mrs. Oestrin with the hirsute Professor himself. The Professor is evidently a raconteur of some note, for Mrs. Oestrin emits peal after peal of liquid laughter, which so fires the Professor that he bursts into song.

PROFESSOR'S "HOTCHA" SONG

(*Lyric by P. M. F. Bishop*)

Science is all very well in its proper place.
Even Professors require a breathing space.
Everyone works in the daytime,
Night is reserved for a gay time;
That's when enjoyment I very persistently chase.

Each night when my work's over
I dance my troubles away.
Eh, yes, I'm a gay rover,
I turn the night into day.
Come along and we will try to hot it up;
Never mind the cost; in the morning we'll tot it up.
So let's do things and go places,
And turn the night into day.

Under cover of the enthusiasm aroused by this song I deeply regret to say that Strophanthin abstracts the Professor's case; on the heels of his last pirouette the Professor discovers his loss and the stage rings with his lamentations, which spur all to search every nook and cranny under the able direction of C. Putnam Sherlock and his faithful Watson Shamble. Just when all hope is lost the missing case mysteriously reappears, and all smiles again the distinguished group take their seats for the photo. There is a frenzied squeal from Mrs. Oestrin, who has "the hell of a shock" as a long dagger sticks quivering on the Professor's chair, missing him by a hair.

With justifiable trepidation the Professor sits quivering on his chair awaiting the long-delayed photo; something in the photographer's dirty, if muffled, laugh from underneath the hood of his carefully sighted camera strikes Strophanthin as sinister, and he rushes forward shouting, "No, no; not here!" as a loud report rings out, and the curtain falls on the smell of cordite and the screams of Mrs. Oestrin.

The next scene opens in the Physiology lecture theatre, where Cubebs (Fowler) and Copaiba (Blazeby) are engaged in cleaning the theatre for the miraculously invulnerable Professor. The two charladies are moved to song and dance.

THE CHARWOMEN'S SONG

(*Lyric by P. M. F. Bishop and P. V. Reading*)

Though our dress is not attractive,
Though our hair is quite unkempt,
Yet our passion's not inactive,
Nor from love are we exempt.
Yes, I lie in wait for Ryffel,
As he goes to catch his train.
You may think I'm talking piffle;
I've got Stead on the brain.

Oh, there's lots of girls who'd be afraid
Of the things we do as the Dean's housemaid;
But though our looks are plain and staid,
We're bubbling with fun.
Though a charmaid's pleasures are scarce and few,
Though our pastimes wouldn't appeal to you,
You can't imagine what we do
When work is all done.
All the floors must be scrubbed each day,
Then we polish the Dean's parquet,
And he views cigarettes with grave dismay.
You've no idea how we're all inspired,
What a zeal and zest we have all acquired;
For if we don't we'll all get fired,
Lose our place in the sun.

I would bend my knee to Gibson,
Just to gaze into his eyes.
Let me only get my lips on
That moustache of Kelsey Fry's.

I'd say " ninety-nine " for Marshall,
And I'd take Kaylene for Mutch.
To D.-C. I'm always partial ;
Slecky's hand I would clutch.

Oh, there's lots of girls, etc.

I am safe with Harold Chapple,
He's so gallant and so strong ;
Any rival I would grapple
If she kept me from him long.
Then there's Dr. Arthur Douthwaite,
With him to fly I'd not refuse.
I might even get my portrait
In the *Sketch* or the *News*.

To our intense regret they disappear and leave the stage in darkness. A dark form glides through the silent benches, an electric torch flashes round the theatre and comes to rest on the tumbler of water prepared for the Professor. A sinister bottle appears and two drops fall into the glass below. Who is it ? A chance reveals the lined and purposeful face of Bella Donna, determined to help her loved Strophanthin. Hardly has the audience's gasp of horror died away, when a darker form glides through the theatre, a torch flickers and comes to rest on the tumbler of water prepared for the Professor, a sinister bottle appears and two drops fall into the glass below. Who is it ? A chance reveals not the lined face of Bella Donna, but the pretty face of Polly, who is apparently engaged on the same fell errand. The horror deepens as a third dark form glides through the silent theatre and a torch flickers round. This is becoming a habit—the Professor's cup will be too full, but no ! This time it is the noble hero determined to save the heroine from the consequences of her foolish infatuation. He is about to change the glass when the light flashes on and he is discovered in very suspicious circumstances by Sister Tutor and her nurses, come to get ready for the Professor's arrival. Before he can explain the official party arrives and receives a charming greeting.

CHORUS OF WELCOME TO PROFESSOR POMPHOLYX

(*Lyric by P. M. F. Bishop*)

Nurses—

All hail, Professor Pompholyx,
From Sister and her little chicks.
We're told you can, by various tricks,
Restore eternal youth.

Cleaning the Dean's Parquet

Although we now look young and gay,
In twenty years our hair'll be grey.
Reveal your secret, don't delay;
We've come to hear the truth.

Professor Pompholyx—
Oh, ladies, I am much impressed
That you should take such interest;
And in reply to your request,
I'll tell you all I can.

C. Putnam Sherlock—
Although I'm certain to be bored,
With condescension I'll applaud.
I have a feeling he's a fraud;
He's not an Englishman.

Mrs. Oestrin—
Because I am the Super.'s wife,
Such irksome functions fill my life.
I wish they'd stabbed him with that knife;
I'm sure he'd not be missed.

Sister—
Although not aged, I, for one,
Will take your extract by the ton;
And then I may enjoy the fun
And thrill of being kissed.

Omnes—
Come now, Professor, let us hear
Your lecture, please, and make it clear
Or else we'll go to sleep, we fear
That would be impolite.
So come on, Cheiro, spill the beans,
Your speech deliver, by all means,
But make it snappy, like the Dean's,
And then we'll be all right.

The Professor launches into his lecture, but, to the general dismay, it is in German, and the Dean suggests his reading a translation, which the Professor is about to do when he discovers that in the famous bag there is really nothing but waste paper. This is too much for the Professor; first they try to kill him—once, twice—and next they steal his papers, and the Professor would not have continued but for the irresistible appeal of Mrs. Oestrin. He recommences in English, but alas! his English is double Dutch, and his reference to the "luggage" of his experimental elephant is too much for the volatile Mrs. Oestrin, whose silvery laughter is too much for the Professor, and he refuses to go on, but he relents and orders his faithful Heinrich, heavily disguised as Ireland, to show his films. The first one turns out to be the wrong one, and merely consists of "snapshots of my so successful colleges." While Heinrich prepares the next film the much-tried Professor takes a sip from his glass, but Sam Moma makes an unexpected entrance from the wings and warns him not to drink. Visibly wilting under the strain of all these shocks to his nervous system the Professor slumps into his chair, and the film proceeds to show the development of his work—and what work! What a film! The audience felt quite breathless when the lights went on, and all the actors began to listen to the Dean's inevitable concluding speech. Or all but one, for in his chair sits the poor Professor, at peace at last—as dead as mutton! A sad moment, but there is no time for idle regrets, for the next scene is in the Dean's office, where an inquiry into the recent tragedy is in progress. Suspicion fills the air. What was Sam Moma doing with the glass of water in the theatre? Why did Strophanthin seem to anticipate the photographic shot? Who dropped the dagger from the Nurses' Home? The Dean is puzzled, but the redoubtable Putnam Sherlock and the inevitable Watson Shamble are on the trail, and the air is thick with clues. The Dean discovers that poor Professor Pompholyx's glass was poisoned, as he suspected. The Matron's women police are soon hot on the scent.

POLICEWOMEN'S MARCHING SONG

(Lyric by P. M. F. Bishop)

One, two; one, two; one, two, three;
Marching up and down the Colonnade.
Sisters, warders, gaolers we
See that law and order is obeyed.

For I control their morals
And I frustrate their men,
And I remove their powder puffs.

One, two; one, two; one, two, three;
We're the policemen of the Nurses' Home.

We are the Nurses' Belisha Beaconess.
Advice we give them when they are in distress.
It's no use hiding,
You might as well confide in
The Guardians of the Home.

We do our sleuthing with cunning and finesse;
But when the culprit is caught there's no redress.
With gentle chiding
We make her law-abiding—
Matron's Women Police.

Within her room at once each little nurse we lock up
When a man comes in the Home.
And only men of early middle age like Cony
Unattended may roam.

And every time that the nurses give their dance
It is our duty to see they get no chance
To kiss or cuddle
Or in a corner huddle—
Matron's Women Police.

Right, left; right, left; right, left, right;
Up and down the wards we march all day;
Using all our strength and might,
Bureaucratic methods to display.

Ignore the House Physician,
Neglect the Registrar,
But see that all the taps are clean.
Right, left; right, left; right, left, right;
All the taps and brasses must be clean.

When Joey calls for another mask to bite,
Pay no attention—he'll shortly be all right.
They're always swearing,
We find them overbearing
The members of the Staff.

Just take no notice of, " Sister, would you mind ? "
Remember, Nelson had one eye that was blind.
They like to think they
Are getting all their own way ;
That's what makes us all laugh.

Men are a nuisance, but they may be tolerated
If they promise to behave.
But once they start to argue or to stir up trouble
They'll get more than they gave.

We are the virtual Rulers of the Wards ;
We are accepted as female overlords.
We'll quickly larn 'em,
Those silly Housemen, darn 'em !
Matron's Women Police.

Soon they find a victim, for, betrayed by the traditional sneeze, Pretty Polly is discovered in the Dean's cupboard. Defiantly she declares her toxic guilt, but Sam Moma, not to be outdone, declares his. The Dean puts two and two together and orders their arrest, but on second thoughts decides to leave them together so that the authors may get in a love duet before it is too late. Polly and Sam, united by adversity, oblige before their departure to their separate cells.

LOVE DUET

(*Lyric by P. M. F. Bishop*)

Sam—
In your eyes I see a love-light glimmer.
Put your trust in me.
In your hair the golden sun-rays shimmer,
You are just for me.

We'll wend our way through life capriciously, deliciously,
and yet judiciously.
In your eyes I see a love-light glimmer.
Put your trust in me.

Banish fears, dry your tears ;
Always remember, darling, I love you.
There's always rain before it shines.
Fortune steers our careers,
No one can harm us, dear, if I love you.
It's only fools that fear confines.
Troubles we will laugh at
When we're man and wife,
Chancing the day, dancing our way through life.

Polly—
In my heart at last a place you've taken.
Love like this won't fade.
Here with you I'll never be forsaken,
Never be betrayed.

The arrest of Polly and Sam Moma for the murder of the Professor

For we're in love at last, tremendously, stupendously,
you can depend on me.
In my heart at last a place you've taken ;
Love like this won't fade.

It is queer I should fear,
When there's no doubt that you're protecting me.
I now know that you love me true.
Hold me near, let me hear
That you, for one, are not suspecting me.
Tell me what I've got to do.
I'm so very frightened,
But for you I'd cry.
Now in your arms, safe from all harms, I lie.

Both—

In { my / your } arms for evermore { I'll / you'll } hold { you, / me, }
Safe from Life's turmoil.
Nevermore shall anybody scold { you. / me. }
Perils shall recoil.
And there'll be cloudless skies for you and me, when we are free, and we'll live happily ;
And { these / those } strong arms shall evermore enfold { you, / me, }
Safe from Life's turmoil.

The final scene opens in Strophanthin's laboratory, where, in a maze of glassware, he labours at "Rejuvenin." The four dark brothers lurk in the shadows, but vanish when Bella Donna appears and pleads with Strophanthin to fly with her. For where she missed with her trusty dagger, she hit with her poison, and Strophanthin, already suspected of stealing the Professor's papers, will be held guilty of the murder. But Strophanthin has other plans afoot, for in that electric furnace, subjected to enormous temperature and pressure, lies Rejuvenin, the secret of eternal Youth ; generously he bestows it where it is most needed, and Bella Donna swallows the pill.

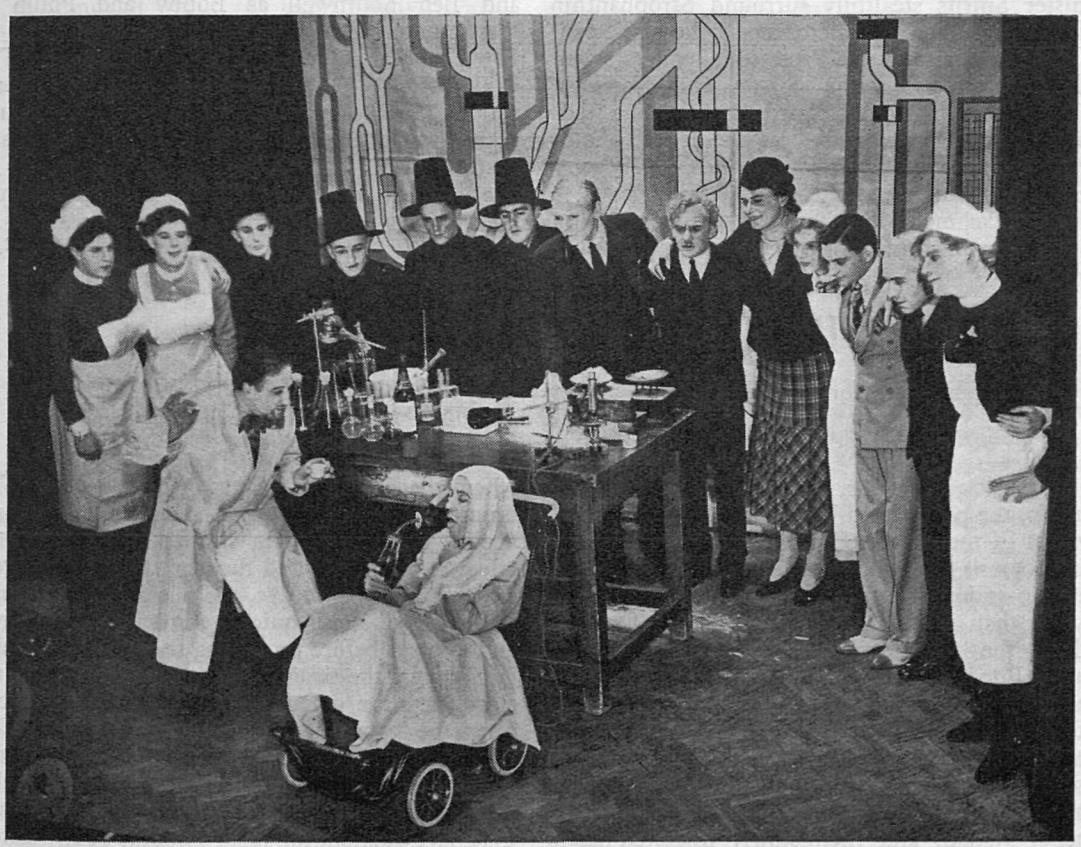
Fortunately it has a long latent period, and Bella Donna sings a magnificent Aria, while Strophanthin somewhat callously continues his research.

ARIA BY BELLA DONNA

(*Lyric by Charles de Gruchy and Philip Reading*)

Recitative—

Avaunt ye, arteriosclerosis ;
Soften ye, arteries, for my leaping pulse
Begone, decay and halitosis.
This magic wizard's brew the creeping years annuls
Farewell to lines, to wrinkles, stays and dentures.
This is the key to amorous adventures.



Finale

Aria—
Pause, trembling hands ; pause, heart, don't be too active.
Think once again.
Gaze eyes, your last on features unattractive,
On features plain.
Does it mean death, molecular disruption ?
Contrariwise ?
Will they be bright, for masculine seduction—
These faded eyes ?

Yet should it mean that death will be my portion;
I will not linger where all is at stake.
Fling to the winds all remnants of caution.
All I will venture for thy dearest sake.
Then in my beauty, though all shall adore me,
Thy love alone will I keep in my heart.
Thine is the face that is ever before me.
Love, love, none shall keep us apart.

Pause, pulsing heart, and cease thy hurried beating ;
Pause and beware.
Stop, futile brain, thy cowardly entreating ;
I'll not take care.
Oh, magic draught, oh, strange, mysterious potion.
Now do your will.
I feel inside a colicky commotion—
It is that pill.

When the thunderous applause has subsided, Bella Donna retires to a room apart for her transformation. The lights burn low as the four sinister Spirits stealthily surround Strophanthin star-gazing down his microscope ; the first Spirit is about to snatch the Professor's papers when suddenly all the lights go on and Sherlock, followed by the whole crowd, catches him red-handed. He is recognised as the lethal photographer, and Sherlock orders his arrest. Whereupon he reveals himself and his fellow ghosts as the four Schmellie brothers come from America to steal Strophanthin's discoveries. Strophanthin, in his turn, shows that the Professor's papers were a fraud, and Sister Blumenthal announces that the Professor's post-mortem shows that he died from heart failure, not poison ; and, as Sherlock says : " I think that every detail of this intricate mystery has now been satisfactorily explained."

Hero and heroine are reunited, and only Bella Donna is missing from the final stage. She makes her entry—Young and Lovely—in a Pram !

FINALE

(*Lyric by P. M. F. Bishop*)

Sing, nurses, and sing, sisters.
The words don't matter at all.
Sing, misses, and sing, misters.
Just hum the tune and that's all.
Put away your gloomy thoughts and shout out loud.
Try and make a noise of which an elephant would be proud.
So sing, nurses, and sing, sisters ;
The words don't matter at all.

Happy memories of half-forgotten plays mellow with time to a dim melodious blur, but certain scenes stand out like mountains from the mist : Miller and Pye-Smith in the moonlight singing, " I knew I had been dreaming " ; Blaikley, as Nick in Heaven, to the sound of harping ; Bishop and Ben Southwell as Bobby and Philip in " Afternoon Tea in Bright " ; McConnell as Hurst and Faulkner as Gibbie, but if " The Professor Dies " eventually fades like all its forerunners, I still shall see Nicolai beautifully singing, with Howell quietly busy amongst his retorts and pestles.

So ended an excellent play most excellently played.

E. R. B.

The Reticulo-Endothelial System

A Paper read before the Physiological Society of Guy's Hospital, on 16th November, 1934, by L. C. Thomson, Esq.

(*concluded*)

In specific infections, such as syphilis or tuberculosis, the part played by the reticulo-endothelial system in the untreated disease is mainly one of phagocytosis of the causitive organisms, and the reticulo-endothelial reaction is more predominant by far than in the ordinary pyogenic infections, where the polymorphonuclear response is the rule. But if the disease is treated, it seems that the system plays a large part in the accentuation of the drug that is given. For instance, when arsenical compounds, such as neosalvarsan, are used in the treatment of syphilis, it appears that they are rapidly absorbed by the reticulo-endothelial system, and then slowly liberated again when the organism comes within reach. This opinion is held because if neosalvarsan is used against the organism in culture tubes, very little effect is produced, and further, that if the system is " blocked " with dye, the neosalvarsan remains in the blood, and is quickly eliminated by the liver and kidneys before producing the required results. In fact, for the drug to be effective in killing the spirochæte the defence mechanisms of the body must be available. The sanocrysin given for tuberculosis acts in a similar way, but since this compound is colloidal in nature it probably stimulates the reticulo-endothelial cells to greater phagocytic action, for small amounts of any colloid

stimulate reticulo-endothelial tissue. The mode of action of sanocrysin is particularly interesting because it may be possible to find drugs which can stimulate reticulo-endothelial cells in a great many more clinical conditions, and modern therapeutics is tending more and more towards stimulating reticulo-endothelial tissue.

The problem concerning the site of production of barrier two of the antibodies in the blood is much discussed. The obvious theory is that they are produced by barrier three of the reticulo-endothelial cells, but the evidence for this is of the flimsiest. Since the bacteria are taken up by the reticulo-endothelial cells it might be supposed that from the protein of their carcasses, so to speak, antibodies would be produced, but the results of " blocking " the reticulo-endothelial system are most disappointing, and it cannot be said definitely that this is so. The other piece of evidence in favour of this theory is the fact that if the reticulo-endothelial cells are grown in jelly they can be made to form antibodies, but the results of any culture experiments must be very carefully accepted because the surface of an agar slope is scarcely homologous with the complicated environment within the human body.

However, modern belief tends towards the theory that the reticulo-endothelial system is both responsible for the cellular defence, or third barrier of the body, and the humoral, or second barrier of the body, which comprises the tissue fluids and the antibodies within them.

Metehrrihon has recently made some wonderful experiments to show that this phenomenon of immunity, which is equivalent to sensitisation of the body, may be synonymous with sensitisation of the central nervous system. He has taken an earthworm and, finding that it will develop an immunity to cholera vibrio, has destroyed its third segmental ganglion, when he found that it was then impossible to produce immunity. If, however, he destroyed any other ganglion, the production of immunity was still possible, and thus he associates the production of immunity with the third segmental ganglion in the worm. Further, he has tied a ligature round the centre of a worm so that only the nerve cord remains, but the blood supply was cut off, thus leaving the two halves united solely by the cord. Then, on immunising the back half of the worm, he found that immunity also developed in the front half, and concluded that the cord had been the means of its transference. But the most conclusive evidence of all his experiments is that on the rabbit. He immunised this animal to cholera by a series of injections of dead vibrio, which he associated in the animal's mind with the ringing of a bell after the style of the conditioned reflexes of Pavlov, and when immunity was at its height, he waited three weeks and allowed it to fall to a normal level. He then commenced to ring the bell alone at regular intervals, and found, to his delight, that the immunity rose again to a high level, thus showing immunity to be a sensitisation of the central nervous system, which could be called out at any time to a proper stimulus. The inference must be drawn, then, that the reticulo-endothelial system, although so diffuse, is probably controlled by a nervous or hormonial mechanism.

Lastly, there is the function of controlling the growth of neoplasms, and, more particularly, cancers.

Since cancer is a new formation of tissue, it might be thought obvious that the reticulo-endothelial system could be responsible for its control and possible removal; but that is by no means the case, and the theory of the reticulo-endothelial control is now advanced tentatively on but small grounds.

The spleen seems to be the chief source of tumour resistance, because malignant growths rarely set up secondaries there, and Beuda suggests that this organ gives out a positive substance, for she finds that when the spleen is removed, tumours become more easily transplanted and grow more quickly.

Further, it has been discovered that if tumour cells are planted into an animal along with the splenic cells, no growth is formed, and that if a mouse is " blocked " with dye, it becomes more susceptible to a tumour to which it was before insusceptible.

Other evidence is largely circumstantial. For instance, tarring the skin is known to produce new growths, and it is also known to damage the local reticulo-endothelial cells considerably. Also the emanation of radium is known to produce tumours, as are also X-rays, and both these emanations are known to weaken the reticulo-endothelial system considerably. The aim, therefore, in therapeutics with these two radiations must rather be to give very small doses to stimulate the reticulo-endothelial cells than to give larger doses in order to kill the tumour cells and damage irreparably the reticulo-endothelial system. The clinical evidence, however, is still lacking, for no records have as yet been made as to the state of the reticulo-endothelial system in cancer patients, and, indeed, only a few tests as to the state of the reticulo-endothelial system efficiency exist, and until this is done the part played by the system in the cure of cancer must remain *sub judice*.

CONCLUSION

Pathologically, then, the reticulo-endothelial system plays a large part in the control of disease, and the tendency of modern therapeutics should be towards improvement in its efficiency rather than towards eliminating the invader by more direct methods. Prophylaxis means a good reticulo-endothelial mechanism, and lucky is he who has such a system, for if, for any reason, it should fail, it would be bad for him.

Physiologically, however, the system is the example *par excellence* of the motto which is engraved upon the heart of all good physiologists, " Function Determines Structure."

Memories of a National Service Board

IN the early summer of the last year of the War, when the " older men " were called up, I found myself appointed, with two others, as a whole-time member of a Board. There was an officially appointed Chairman, and local practitioners made the number up to about eight and twenty. As haste was essential two Boards were formed, three or four of us taking turns to act as chairman of the second.

My colleagues were a very nice set of men and call for no comment, except one retired man, who, if he ever knew anything, had forgotten it, and a dear old chap who often arrived from his village with a car full of market women who had begged a lift. The letter " H " was unknown in his vocabulary, and once when he was not satisfied with a man's agility he brought him to me to consult with the remark, " This man can't 'op very well," and, turning to the man as to a precocious child, " Show the gentleman 'ow you 'op."

We usually worked in fours, the first noting anatomical details, the second superficial defects and physical jerks, the third taking the chest, and the fourth eyes. The last seemed to me a soft job, so I brushed up my knowledge of refraction and spent a good deal of time at it, and never found anyone anxious to take it over. The testing of illiterates is a tedious job, but we had an orderly who was equal to most emergencies, and he took them over the symbols used in such cases, which he called " rakes," while I sat near and checked his results. This orderly nearly met his Waterloo with one man who arrived without his paper, and he began to question him :—

" What's your name ? "
" I dunno."
" What does your father call you ? "
" Ain't got no father ; he's dead."
" What does mother call you ? "
" Ain't got no mother ; she's dead."
" What did they call you when they were alive ?"
" Didn't call I nothing ; didn't like I very well."
" Where do you work ? "
" Brown's factory."
" What do they call you there ? "
" Don't call I nothing."
" What do they say when they pay you on Saturday ? "
" Don't pay I Saturday ; pays I Friday."
" What do they say when they pay you on Friday ? "
" Here y'are."

The old classification " C3," etc., of which we heard so much was by then abolished, and the men were put into four grades—General Service, Home Service, Auxiliary, and Useless. One morning we began at 10.30 and worked till 1.15, and no First-Grade man arrived till 12.50, and he was the only one during the sitting. We met on two Saturday afternoons ; on the first we examined three and got two third grade and one fourth. The next time we again got three, who furnished one third grade and two fourth.

I caught sight of a man in the distance with a torso like a Hercules and my expectation rose high, but when I looked at his feet—" ten minutes to two " was nothing to it.

One man came in with a newspaper parcel from which he produced about three inches of femur, and tried to persuade us that he was still a useful man. Another with a roaring double aortic murmur was quite peevish because we would not pass him. The dirtiest man I saw said he was a photographer. The sweeps were noticeably clean. On a blazing hot day a man came in with a pneumonia jacket, as his doctor had told him to keep his chest warm. I heard a most extraoridnary impediment of speech, not what in the West they call " kick-hammering," but the man seemed to be winding himself up for about fifteen seconds and then shot out the whole sentence at lightning speed.

In private practice I rarely see molluscum fibrosum, but I saw more of that there and of hammer-toe than I should have thought existed in the country. This reminds me that when I was at sea a fireman came to my surgery with the complaint, " There's a fellow in our fo'c'sle who is covered with sores and stinks like a badger." I ordered him to be produced, and found the fireman's diagnosis wrong in each respect, but he was covered, front and back, with molluscum

fibrosum, and I have always regretted that I did not secure a photograph. As to hammer-toe, an ex-R.A.M.C. man on the Board told me that many of the best marchers have hammer-toes.

I saw three cases of fistula in ano, two of them in the same session. We had two big men, one of 22 stone 9 lb. and the other of 24 stone. Not very long before the 24-stone man had been a star player in one of the strongest First League teams, and I was told by a spectator that once, when the biggest man in League football was knocked out, he had carried him off single-handed. Poor fellow! He did not live long.

At the other extremity a man of over 50 weighed 5 st. 1 lb., and when we turned him down he went solemnly round and touched his forelock to each of us.

One trouble was that a lot of boys of 18 weighed about 80 lb. and, if sent back for six months, would come back a pound or two heavier or lighter. The R.A.M.C. man said they should be sent for "Special Training," when they would go to the East Coast and be filled up with beef tea, etc. I did not test the truth of this. There was a big Public School in our area, and we always welcomed a contingent from there, as they were easily run through; in fact, I only remember rejecting one, whose height was too great for his general development.

One man's face I shall never forget. He was a farm labourer and, instead of appearing, he had absconded and was brought up by a policeman. He had apparently been sleeping "rough," was unkempt and unshaven, and the look in his eye was that of a wild animal at bay. I should recognise him if I met him now.

Ten years after the War I was relieving a sick man in another part of the same county and had to visit a ploughman. When I had prescribed for him he said, "I think I've seen you before." I doubted it, and he then asked if I had been examining soldiers in the county town during the War. I told him I had, and he said, "Then that's where I see'd you." I said, "I see your name is Blacklock; are you a connection of the great Blacklock clan at Marshbrook?"

"No, but I remember that doctor asked me the same question."

That put it beyond doubt, for no one else on the Board could have known that Marshbrook was full of Blacklocks. I could only think that his examination was the most important thing that had ever happened to him, and he had remembered every detail.

"NAUTICUS."

Correspondence

Residents and Refreshments

To the Editor of the GAZETTE

SIR,—I read with no little interest that portion of your editorial in the current issue of the *Gazette* concerning the difficulty of the Residents in obtaining refreshment.

Being myself very much a "fresher," it is with some trepidation that I venture to put on paper adverse criticism of such an excellent and venerable institution as Guy's Hospital College, but I feel cheered when I note that even such superior persons as the Residents experience an inadequacy which is shared by the humble new boy.

The food I find excellent, but I do object to wandering about in the "Spit" with a glass of water in one hand and my entire dinner precariously balanced in the other, whilst I try (*a*) to avoid a smash and (*b*) to find a seat, endeavouring the while to hide a most unpleasant feeling of embarrassment.

Again, upstairs, the surroundings are delightful, the food agreeable, the service efficient, and the accommodation lousy, if I may be permitted such a vulgarism.

Cannot something be done either to improve the accommodation or else to arrange that the seeming thousands of students and others do not all have to satisfy the cravings of the inner man at 1 p.m.?

Yours, etc.,
A VERY NEW BOY.

"Little Oaks,"
Christchurch Avenue, N.12.

Reviews

The Hospital Almoner. Published by Messrs. Allen & Unwin. *Price, Cloth* 5*s.*, *Paper* 3*s.* 6*d.*

A BRIEF study of Hospital Social Service in Great Britain has been prepared by the Hospital Almoners' Association, and will be published on February 26th with the title "The Hospital Almoner." This gives a brief history of the founding of the Almoners' movement and a detailed account of the work, while not underrating the difficulties, and is a book that will be invaluable to all parents with daughters to educate, and to teachers and to head mistresses.

Oxygen and Carbon dioxide Therapy. By ARGYLL CAMPBELL and E. P. POULTON. Published by the Oxford University Press. *Price* 12*s*. 6*d*.

THE therapeutic uses of oxygen and carbon-di-oxide are clearly matters of considerable importance to the medical practitioner. Unfortunately, they have not usually been the subject of any concise and clear-headed instruction during the ward teaching he received as a student. Most medical men possess, therefore, but a hazy idea of the actual scientific basis on which the employment of these gases in treatment must rest, and very little notion of any recent developments in the technique of their administration. The actual practice of gas therapy remains, in fact, somewhat haphazard and almost entirely empirical in dosage. This situation has arisen because the ancillary literature has, up to the present, been difficult of access and mainly academic in character. Moreover, no review appearing in the course of the last thirty years has yet managed to attract the general attention which such a subject undoubtedly deserves.

With the appearance of this monograph these difficulties have to a large extent been overcome. The joint authors approach their subject for the main part in a thoroughly scientific manner and their bibliography is exhaustive, nearly four hundred references being made. It cannot be said that the hundred and fifty pages which result make altogether easy reading, but for the tyro there are convenient summaries at the end of each section, and these alone constitute an authoritative opinion on the available evidence.

Commencing with a concession to classicism in the form of a brief historical outline wherein it is discovered that an English scientist, one Thomas Beddoes, proves to have been the pioneer of oxygen therapy at the beginning of the nineteenth century, the volume proceeds rapidly to an adequate review of the extensive literature dealing with the various means whereby oxygen pressures in blood and tissues may be controlled. These "physiological and pathological considerations" form a preliminary to the detailed account which follows of their application in actual treatment. It appears to be well established experimentally that the inhalation of air mixtures enriched with oxygen to a level of not more than 60 per cent. is quite safe, and achieves a measureable elevation of oxygen pressures in both blood and tissues, while the use by the same route of a mixture containing 6 to 10 per cent. of carbon dioxide, equally safe in the absence of cardiac impairment, tends to raise the effective oxygen tissue pressure as well as to exert a stimulating influence on respiratory activity. Experimental investigation of the comparative efficiency of the various methods of procuring the inhalation of such mixtures brings out quite clearly the uselessness of the glass funnel and shows that the single nasal catheter with properly adjusted flow can achieve the desired results fairly well, while a forked twin nasal tube works very well indeed. In a discussion of the additional advantages offered by more cumbersome forms of apparatus one of the authors is able to draw on extensive personal clinical experience, and technical details of the recently improved Poulton type of oxygen tent are very fully described. It is pointed out that, in addition to accurate control of oxygen and carbon dioxide concentration possible with such an apparatus, the enclosed patient enjoys the advantage of a suitably "conditioned" (*i.e.*, cooled and not unduly humid) atmosphere, while the employment of the ingenious oxygen injector valve in the gas circuit entirely eliminates the necessity for the incorporation of an electrically driven circulating fan with the attendant risks of explosion from ignition of lubricating oil and grease. Supplies of oxygen, ice, and soda lime for this improved type of tent cost in all about a pound a day, and are not, therefore, unduly expensive. The major disadvantage is clearly the necessity for skilled supervision of the instrument at all times, and it would appear quite unreasonable to expect a nurse with general training only to undertake even running responsibility, apart from the difficult setting-up process. To overcome these very real disadvantages it is proposed to establish on a voluntary basis an Oxygen Therapeutic Service sending out trained technicians with the necessary equipment immediately on the request of any hospital or doctor. We understand that for London at any rate such a service is actually in operation at the present moment.

Enthusiasm for the oxygen tent derives in great part from the American continent. It is to be remembered that practical problems which differ somewhat from those in this country are there encountered. On the other side of the Atlantic lobar pneumonia seems to be both more frequent and more fatal in character, while climate, together with the abuse of central heating, contrive to produce temperatures and humidities of atmosphere unknown over here. In America, the inhalation of enriched oxygen mixtures, together with the adjustment of the immediate atmospheric environment, are measures sincerely believed to improve the prognosis of the pneumonia patient, and closed circuit tents are largely employed to this end. Already, however, in certain American institutions

the provision of completely "air-conditioned" rooms and cubicles has been accompanied by a reversion to the employment of nasal catheters for the necessary oxygen in cases of pneumonia. It would seem, in fact, that, standing as we do on the threshold of the next great hygienic advance of general "air conditioning," many of the advantages of the tent are soon likely to be provided in quite a different way by large and well equipped institutions, while, with a diminishing tendency to nurse the patient with pneumonia, or any other serious condition, in his own home, the remaining field for the operation of a tent is likely to be considerably restricted.

Certain statements in the clinical section of the work seem a little obscure. Thus on page 153 a fall of body temperature noted in cases of pneumonia is quoted as *proof* of the "superior effectiveness of the tent." Again on page 103 in the section on coronary thrombosis, four patients with this condition having been treated in the tent with two surviving, the conclusion reached is that oxygen plays a "significant role" in the therapy of this complaint.

There can, however, be no doubt that, as Sir Leonard Hill mentions in his foreword, the authors of this work have made a very notable addition to the literature of their subject, and written a book which may well serve to stimulate general interest and disseminate sound information on a matter of vital importance to clinical medicine

Students' Aids Series. Published by Messrs. Bailliére, Tindall & Cox.

THIS series of books, which dates back to 1876 when the first book, "Aids to Anatomy," was published, has just been modernised in its outward appearance by the provision of an attractive blue jacket or dust cover and the publishers have made arrangements with booksellers in all University towns to exhibit the *complete series* in special bookshelves provided by the publishers. In the past it has not always been possible to find any place where the whole of the Students' Aids Series was available (there have been in all fifty titles issued in this Series), but now it will be possible to go to Messrs. H. K. Lewis, or Foyle's, or Bailliére, Tindall & Cox's own shop and there take down from the shelves any one of the current volumes.

There is a book to cover every subject in which the student—and the examiner—is so deeply interested, and some on subjects in which he has only a partial or passing interest. There are three "pre-medical" Aids—Biology, Botany and Zoology—and another trilogy in Aids to Neurology, Psychiatry and Psychology, all of which have a very wide appeal. Then there are several books like "Aids to Dispensing" and "Aids to Pharmaceutical Latin," which are useful little books for any medical man to have in his library.

It is an excellent idea of the publishers to bring the Students' Aids Series before us in its entirety through the medium of the bookshops, and we congratulate them on the dust covers.

Sport

Rugby

Guy's v. Aberavon

GUY'S journeyed to Aberavon on Saturday, February 9th, and were overwhelmed by 2 placed goals and 5 tries (25 points) to a placed goal and a try (8 points).

After their strenuous Cup-tie on the previous Thursday, the Hospital had to face strong opposition when they found the home side at full strength. Unfortunately, Alexander could not make the journey, and, with Giesen injured, Guy's had to take the field without the mainstay of their attack.

The Hospital are popular visitors to South Wales and the Aberavon supporters gave Guy's a splendid reception. Conditions were ideal, and there was a large attendance present when Avory kicked off for Aberavon.

After Fletcher and Darke had taken the ball to mid-field, Bassett broke through and appeared certain to score, but his punt ahead was too hard and the ball rolled over the dead-ball line. It was a lucky escape for Guy's, who immediately attacked and, with the backs handling with skill and confidence, the Hospital settled down in the home side's 25. Just when Guy's looked dangerous, O'Keefe intercepted and led a fine dribble to the other end of the field, which ended in Randall Lewis beating Dick in the race for the ball and touching down for an unconverted try.

Guy's were surprised by this sudden reverse, but they received a further set-back when Madden sent J. Thomas through the centre and Edwards was up to accept an inside pass which enabled him to cross in the corner.

Within a minute Aberavon scored again; right from the kick-off Bassett raced along the touch-line

and cross-kicked. Sharp mishandled the ball and Jenkins was over in a flash, for a try which James converted.

Guy's responded to the rallying cries of the crowd, and, following a series of passing movements, Dick cut through cleverly and passed to Wright. The latter evaded the attentions of Edwards, but James caught him by the leg only a yard from the line.

The Hospital at this stage were playing good football, but, although several passing movements were carried out, the advantage was lost by poor finishing.

Bassett was injured in a tackle and had to leave the field, and soon afterwards Dick damaged a finger and had to retire also. Then came a brilliant try by Edwards. Receiving the ball some thirty yards out, he swerved past three defenders before touching down in the corner.

Before the interval, Aberavon scored another try through J. Thomas, who gathered in the loose and went right through the Hospital defence without being touched.

Both Bassett and Dick resumed in the second half, and, after repelling a sharp attack, Guy's retaliated with a splendid forward rush in which Hopkins, Darke and Fletcher were conspicuous. Dick then started a movement which almost ended in Stanyon-Jaques scoring.

Aberavon were penalised, but Kark missed a chance to convert, and immediately the ball was rushed to the Hospital line. Here a scrum was formed, and R. Lewis managed to cross for James to add the goal points.

Guy's were now getting the ball in the scrums, and a splendid rally pleased the crowd immensely. The forwards got the ball back quickly to Stanyon-Jaques and a great round of passing followed. Eventually Dick obtained possession and beat all opposition to score a grand try, which Kark failed to convert.

Encouraged by this success, the Hospital forwards and backs combined in another glorious movement in which seven or eight members of the side handled the ball in turn. Finally it reached Steytler, who completed the effort by scoring the best try of the match behind the posts, and Dick added the goal points.

Near the end Bassett charged down a kick and in a second gathered and crossed for an unconverted try in the corner.

It was a good game, and not nearly so one-sided as the score suggests.

Team.—E. C. Sharp; C. G. Wright, R. C. S. Dick, I. McD. Stewart, T. Fichardt; J. van A. Steytler, K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, C. S. Darke (Capt.), E. R. Davies, C. F. Ziervogel, T. A. Hale-Monro, P. Fletcher, R. O. Yerbury.

Guy's v. Old Millhillians

ON Saturday, February 16th, Guy's met the Old Millhillians at Headstone Lane, and again suffered defeat by a placed goal, a penalty goal and 3 tries (17 points) to a try (3 points).

Owing to injuries, the Hospital were compelled to field a reserve back division, only Fichardt and the halves of the regular fifteen being available.

The conditions were all against good football, as there was a very strong wind and the second half was played in a drizzle.

The forwards were evenly matched in the set scrums, but Guy's held a definite advantage in the loose.

At half there were some good duels between Morley and Steytler, but Wiggins at scrum-half was in brilliant form and kept a firm hold on Stanyon-Jaques.

The Old Boys had a big pull at three-quarter, and they made full use of the chances that came their way. E. A. Miskin, on the left wing, was a source of worry to the Hospital, and two of the three tries which he scored were splendid efforts on his part.

In the first half Guy's had to face a strong wind, and at the end of six minutes an excellent bout of passing between the Old Boys' three-quarters ended in Miskin crossing too far out to convert. A little later Miskin again scored an unconverted try after Williams had worked out an ideal opening.

Before the interval Morley broke away and scored a try, which Lackie converted.

After the change of ends Guy's reduced the deficit when Birks scored a surprise try, but Miskin obtained another try for the Old Boys.

Guy's tried desperately to get through, but they met a strong defence, which they failed to penetrate.

There were several very good movements on both sides, but the only score that followed was a penalty goal kicked by Lackie.

Team.—O. P. Llewellyn; E. W. Adkins, P. H. Birks, T. Fichardt, R. M. de Gregory; J. van A. Steytler, K. A. Stanyon-Jaques; M. R. Kark, P. H. Hopkins, C. S. Darke (Capt.), E. R. Davies, C. F. Ziervogel, P. Fletcher, T. A. Hale-Monro, R. O. Yerbury.

Guy's v. Blackheath

AFTER a lapse of twelve years Blackheath visited Honor Oak Park on Saturday, February 23rd, and overcame the Hospital by 4 goals, a penalty goal and 2 tries (29 points) to nil.

The visit of the "Heathens" attracted the largest attendance seen at the ground this season,

and, although Guy's were defeated by such a substantial margin of points, the game was nothing like so one-sided as the score suggests. In fact, Guy's had very bad luck in not scoring at least on two occasions, and Alexander only missed a penalty by the narrowest of margins. On the other hand, Blackheath never missed the slightest opportunity of seizing a scoring chance, and thoroughly deserved their success.

Our visitors fielded a powerful side, which included four internationals, but even then they were without Tallent and Novis. On the other hand, notable absentees from the Hospital side were Sharp and Giesen, both nursing injuries, and Dick, who was assisting Scotland against Ireland.

The weather was ideal, and the ground in excellent condition when Blackheath started a forward rush which gained them a footing in the Hospital's 25. Within a minute they were three points to the good, when, following a line-out five yards from the line, Bailey hurled himself over for an unconverted try. A little later the Heathens had another opportunity when Bowles, who was playing at full-back, was caught in possession, but Alexander cleared, and eventually a nice round of passing carried them within a few yards of the line; unfortunately, Guy's had a penalty given against them and Parker sent play back to mid-field.

Cridlan and Bailey were prominent in another forward rush, but Davies drove them back with a good kick to touch. Then Guy's missed a wonderful opportunity to equalise when Alexander cleverly cut through the defence with Wright on the outside. When faced by the full-back, Alexander timed his pass to perfection, but, although he had a clear run in, Wright knocked on what would have been a certain try.

Encouraged by this escape Blackheath resumed the offensive, but eventually de Gregory made a fine sprint along the left wing and was thrown into touch inside the visitors' 25. From here a passing movement broke down and Parker found touch with a splendid kick of 40 yards.

Guy's had another chance when Alexander broke through on the left and passed to Fletcher; the latter actually crossed the line, but he was tackled when in the act of touching down and lost the ball. It was very bad luck, as at this stage Guy's deserved to be on level terms at least.

After Black had failed to convert an easy penalty, Guy's again attacked in great style, but the final effort was weak. Just before the interval Blackheath gave a brilliant exhibition, and from a line-out Bailey cut across to Rees, and the latter sent in Aarvold for a try, which Black converted with an excellent kick taken from near the touch-line.

Guy's started the second half strongly, and with Hopkins getting the better of Gregory in the set scrums the threes saw much more of the ball. A fine effort by the backs nearly led to a score, but the final pass to Wright was erratic and another chance wasted.

A penalty to Guy's was well taken by Alexander, but his kick just failed to reach its objective.

Parker made a mark in his own 25 and found touch with another huge kick. In the loose play that followed Stanyon-Jaques was over-anxious, and Black kicked another fine penalty goal from near mid-field.

Guy's were now sorely pressed, and they had to use all their resources to keep out the visitors, who were playing magnificently. On one occasion Barton came across from the left and Brandram was pulled up only a yard from the corner flag. Another bout of passing followed quickly, and Aarvold cut between Fichardt and de Gregory to score an ideal try, but Davies raced up and charged down the kick at goal.

A minute later another try came when a raid by the forwards carried them over the line, and Cridlan touched down for Black to add the goal points.

After Hale-Monro had made a great solo effort, Blackheath again stormed the Hospital line and scored two further tries, which Black converted.

Team.—V. H. Bowles; C. G. Wright, P. C. Alexander, T. Fichardt, R. M. de Gregory; J. van A. Steytler, K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, C. S. Darke, E. R. Davies, C. F. Ziervogel, T. A. Hale-Monro, P. Fletcher, R. O. Yerbury.

Hockey

Guy's v. Staff College

THE fixture against Staff College is one which the Hospital always anticipates will provide good hockey under excellent conditions, and the visit to Camberley on February 13th provided a keenly contested game, which was more even than the score of two goals to nil, in favour of the Staff College, would suggest.

In the first half Guy's had rather the better of the game, and twice looked like scoring when Franklin gathered passes from the centre and beat the backs, only to fail with his shot, the second hitting the post.

The defence was very firm, and it was not until shortly before half-time that the score was opened by Staff College, to give them a lead of 1—0 at half-time.

In the second half the Staff College attacked fiercely, and after about ten minutes added another goal with a shot that gave Brown no chance.

Guy's, however, were soon on the offensive again, and until the end of the game were pressing. A lack of combination by the inside forwards was probably the direct cause of the failure to score at this period, and Guy's were unlucky to have a shot by Richmond disallowed.

Team.—H. V. Brown; G. M. Turner, R. G. Archer; D. P. King, A. G. Richmond (Capt.), C. F. Wright; J. B. Franklin, S. J. McCallin, E. B. Rowe, J. J. M. C. Jenkins, A. S. Bookless.

Result.—Guy's, 0; Staff College, 2.

Hospital Information, etc.

Notices

A Clinical Research Assistant with special training in psychological medicine is wanted. Remuneration is to be arranged. Applications should be addressed to The Superintendent, Guy's Hospital.

The United Hospitals' Boxing Competition will be held at The Ring, Blackfriars, on Monday, March 4th, commencing at 7.30 p.m. Reserved seats are 2*s.* 6*d.*, 5*s.* and 10*s.*, and tickets may be obtained from the Medical School Office. Unreserved seats may be obtained for 1*s.* 6*d.*

Pass List

UNIVERSITY OF CAMBRIDGE.
M.B.
T. O. Garland.

Papers by Guy's Men

R. C. Brock. A simple instrument for finger extension. *Lancet*, 1935, i, 382.

H. G. Close. Basophil adenoma of the pituitary gland with renal changes. *Brit. Med. Jour.*, 1935, i, 356.

W. H. Ogilvie. Place of surgery in treatment of peptic ulcer. *Lancet*, 1935, ii, 419.

H. W. A. Post. The diagnosis of some lesions of the stomach. *West London Med. Jour.*, 1935, xl, i.

R. Bruce Pearson. Recurrent swelling of parotid gland. *Proc. Roy. Soc. Med.*, 1935, xxviii, 414; Sec. Study Dis. Childn.

L. Forman. Pemphigus. *Ibid.*, 366 (Sect. Dermat.).

T. B. Layton. Fixation of cords in a case of exophthalmic goitre. *Ibid.*, 439 (Sect. Laryngol.).

CORRECTION.

Owing to a printer's error, the list of "Papers by Guy's Men" in the last issue started with the first reference as *Ibid.* This should have read, "*Proc. Roy. Soc. Med.*, 1935, xxviii, 337 (Clin. Sect.)," and should have appeared in the issue of 2nd February, but was omitted through lack of space.

Appointments

Dr. Roberto Chartier, House Surgeon (Dental) at Hospital San Juan de Dios, San José, Costa Rica.

Sir Cooper Perry, Chairman for the year 1935 of the Board of Management of the London School of Hygiene and Tropical Medicine.

Miss R. Dreyer, S.R.N., S.C.M., Principal Matron, London County Council.

Dr. A. Norman Leeming, of Cilgwyn, Old Colwyn, N. Wales, has been appointed on the Commission of the Peace for the County of Denbigh.

THE SERVICES

Lt.-Col. G. Covell, an officer of the Medical Research Department, has been placed on foreign service under the Association of the Pasteur Institute of India, Kasauli, for appointment as officiating Director of that Institute as from December 15th, 1934.

Change of Address

Leslie P. Harte, Beechwood, Manor Hall Avenue, Hendon, N.W.4; also at 15, Stratford Place, W.1.

Births

FLOYD.—On January 28th, 1935, the wife of H. G. Floyd, M.R.C.S. Eng., D.T.M., at Mbala, Uganda, B.E. Africa—a daughter.

NORTHFIELD.—On February 16th, 1935, at 27, Welbeck Street, W.1, to Marjorie, wife of D. W. C. Northfield, M.S., F.R.C.S.—a son.

BARNARD.—On January 6th, 1935, at "Kingslea," Mulgrave Road, Sutton, to Elma (née Melville), wife of W. J. Bernard, "Ruthwell," Manor Road, Cheam—a daughter.*

*We much regret that, owing to a printing error, this announcement appeared under the wrong heading in the last issue of the *Gazette*, and we offer Mr. and Mrs. Barnard our deepest apologies.—ED.

Marriage

HARTE—PONTING.—On February 6th, 1935, at All Souls', Langham Place, Leslie Patrick Harte, youngest son of Mr. and Mrs. Percy C. Harte, of Finchley, to Dorée, younger daughter of Mr. W. R. Ponting, of Whetstone.

EDS. {D. P. K. / P. W. C.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX 16*th March* 1935 *Number* 1217

PASSIM

THERE has been a great deal of discussion lately relative to the advantages and disadvantages of creating the post of Resident Medical Officer to deal with the admission of all cases to the Hospital. The post would have been an important one and would have carried with it a salary. We understand that fortunately the Governors of the Hospital condemned the plan, and thereby performed a greater act of justice to the Residents than they probably realised.

We plead guilty to having mentioned in these columns a short time ago that the easiest way of dealing with the difficulty which practitioners find in getting into touch with the Take-In House Officers would be to have an R.M.O. for admitting cases, but that does not mean that we have ever been in favour of such a scheme or that we would commend the abandonment of the present system, even though it has its defects. Rather would we like to see a rationalisation of the present scheme, which we believe to be fundamentally sound, especially if it is remembered that we are primarily a teaching hospital.

If an R.M.O. was allowed to depose the house officers from the privilege of taking-in, house appointments here would lose 50 per cent. of their teaching value, and in the future the fact of having held an H.S. or H.P. appointment here would not carry anything like the high recommendation it does to-day.

There were two main arguments in favour of this suggested appointment. The first was that it would make easier the contact between general practitioner and the admitting officer. The second was that the bed returns indicate that there are 10 per cent. of the Hospital beds empty every night, and therefore that the house officers were not using the beds to the greatest advantage.

The first argument is a valid one, but we would remind our readers that there are four types of case admitted to the wards :—

1. Cases from Out-Patients—placed on the waiting lists.
2. Urgent cases from Out-Patients or the Surgery.
3. Private cases of the Staff.
4. Doctors' urgent cases.

The latter, we believe, form a very small proportion of the whole, and it must remain so as long as the other three take so large a proportion of the beds. Thus we must not regard the difficulty which practitioners have in getting into touch with the Take-In House Officer as a very serious drawback to the present system. We might add, though, at this point that some of the delay could be reduced if practitioners were advised to ring up the Front Lodge, from where they can be put through to almost every department of the Hospital, rather than the College or the Surgery.

Our answer to the second argument is that the figure 10 per cent. is valueless, and means nothing in this connection, for it includes not only beds in Bright, and beds in private rooms, but also beds in such places as the strong room and isolation wards, which can be opened only after stirring both heaven and earth. The truth is that it is seldom that there are more than two vacant beds on the medical side, and perhaps occasionally a few more on the surgical side. If the inaccessible beds were made accessible to the Take-In

House Officers they would be filled and used as readily as they would by an R.M.O.

We firmly believe that many of the disadvantages inherent to the present system could be rectified very easily, and we hope that it will never be necessary to snatch away from the House Officers the few responsibilities which make the appointments here more attractive than those at any of the other big teaching hospitals.

WE publish in this number two letters arising out of the comments we made in " Passim " on the Peace Ballot and the Doctors' Letter. Mr. Beccle is concerned with the small part played by the medical profession in the political life of the country. Dr. Poulton, following the recent circularising of the members of the College with Peace Ballots, writes to explain the intention of the organisers. We do not think he succeeds in establishing a case for the Peace Ballot, nor, whether it be unique or not, can we see that this is a point in its power. We must admit a certain educational value, but that it would have any effect on a Government at a time of crisis we feel to be beyond the bounds of probability.

We are interested to note that even Dr. Poulton agrees that an answer for or against Question 1 by the general public is of no consequence. As to Questions 2 to 4, our attitude is criticised in that we do not vote on general principles. It does not seem to us that there is any such thing as a principle independent of circumstance. That we should be asked to vote on the one without considering the other causes us the same astonishment as might be felt by a bishop on being asked, " Are you in favour of actresses ? "

The statistics quoted are a better example than we could have hoped to produce of the deviations from international agreements which are liable to occur.

Concerning the manufacture of arms for private profit, we said that if this were left to the Government there was no guarantee that they might not show the same astounding incapacity to meet the situation as was shown by the Government Department during the War. Dr. Poulton replies that it was the private firms that failed and the Government factories which delivered arms to schedule, and refers to Lloyd George's Memoirs in support of this. These Memoirs were in our mind when we made this statement, and concerning this question we quote from Mr. Lloyd George Vol. I, page 280 : " The contrast between shells promised and shells delivered is most discouraging, and the discrepancy is bad enough for contractors, but when you come to the national shell factories it is grotesque. . . ." We abide by our statement.

Dr. Poulton suggests that the answer to both sections *a* and *b* in Question 5 must be the same, in which case there appears to be a fault in the Ballot that the question was subdivided. We are unable to understand the use of the word " bluff " in this connection.

We are glad that he agrees that if our Government and the U.S. Government had co-operated faithfully in the carrying out of international agreements the Japanese aggression would probably never have taken place. It is precisely because we are anxious to avoid the moral humiliation of another such default that we deprecate committing ourselves so unnecessarily far.

We do not think it will materially affect the issue whether the youth of the country expresses its views or not ; whatever our wishes, we shall probably have to fight to save our very skins. Our view is still unshaken that the signatories of the Doctors' Letter have much overestimated the value of the Peace Ballot.

TRANSFUSIONS have become a commonplace in a big hospital such as ours, and on that account we tend to forget how the voluntary Transfusion Service was started and has grown up to cope with the increasing demands for its help. The article by Mr. Oliver in this issue will serve to remind us of how much we owe to those who turn out at any time of the day or night to play their part in the treatment of patients. There have been complaints from time to time about the way in which donors have been treated, and we also have no doubt that the complaints were partially justified. Our own experience of donors is that they are very much more tolerant and more willing to put up with minor discomforts and inconveniences than most people, and we wish to take this opportunity of thanking them for the help which they give so readily.

We do not wish to comment to any extent on the article, but we would like to draw attention to the enormous increase in the number of donors supplied to this Hospital during 1934. The causes for this may be many, but we feel very strongly that the services of the Society should be requested only after all the possible relatives have been examined for the purpose of donating blood.

The question of the high preponderance of Group IV patients at this Hospital has worried the authorities for some time, and the stock sera are now checked very frequently so that it is

hoped that when the figures for the present year are published there will be no discrepancy between our figures for the relative number of persons in each group and those of other hospitals.

THE new Clerk's Case Summary Forms, which have appeared so suddenly and without warning in the wards, have not been received with any considerable enthusiasm. Theoretically the innovation seems a sound one, but we feel that it is unfortunate that the questions which the ward clerk is asked to answer for himself have been framed in an unnecessarily puerile fashion. We have been told that the registrars, who probably have more knowledge than anybody else of the difficulties of teaching clerks, were not consulted about the matter before its inception.

DR. CAMPBELL has republished his articles on Dr. Watson and Sherlock Holmes in the form of a small book, which can be obtained either at the Appeal Office or from the Publishers, Messrs. Ash & Co., for the price of 1*s*. We feel sure that many readers will like to have these articles in such a form, and may also care to send copies to their friends and colleagues. The proceeds from the sale of the book will be devoted to the funds of the Hospital, so that we have no hesitation in asking readers to encourage the sale of this fascinating article.

WE should like to make it known to all those going to the Residents' Ball on Friday, March 22nd, who have not yet reserved tables, that they should do so without delay. There has been an unusually heavy demand this year for tickets, which can now not be promised to all further applicants.

The Treasurer of the Residents has asked us to remind those who have received tickets but have not yet forwarded cheques that his work would be considerably facilitated if they would do so at an early date.

ON Friday, April 5th, two one-act plays, followed by a dance, will be given in aid of the Hospital by the " Wimps " at Sunderland House, Curzon Street. Applications for tickets, which are 10*s*., should be made to the Secretary, Miss Daphne Bird, Sunderland House, Curzon Street, W.1, or to members of the Committee.

WE note with some misgiving the presence in the Colonnade of an advertisement relative to the sale of a motor car. We hope that this will not establish a precedent, and is not the prologue to further inroads on the beauty of the Colonnade for such mercenary ends.

Guy's Hospital Blood Transfusions

In 1934, 437 blood transfusions were performed at Guy's. These calls upon the British Red Cross Society Blood Transfusion Service exceeded those of the previous year by 50 per cent. The following are the figures for the last seven years :—

1928	159	1932	203
1929	173	1933	291
1930	167	1934	437
1931	186		

Below is a brief and partial analysis of nearly 400 blood transfusions, the reports of which had reached the Superintendent's Office by the end of 1934 :—

It will be realised that this large number of calls for blood transfusion entails a heavy strain upon the Blood Transfusion Service, and that each donor is losing not only blood, but time and often money, in his voluntary response to the call. It is for this reason that donors of blood should be treated with every courtesy and consideration when he or she comes to the hospital. Donors of blood go to many different hospitals, and are quick to notice variations in procedure, in operative skill and in the atmosphere in which they are received.

For these reasons permission has been obtained from Mr. Oliver, the secretary of the British Red Cross Society Blood Transfusion Service, to reprint an article by him published in the *Journal of State Medicine* in December, 1933. In this article Mr. Oliver gives some account of the inception of the Transfusion Service, and also makes suggestions as to the most satisfactory procedure when a donor attends a hospital.

H. L. E.

ANALYSIS OF BLOOD TRANSFUSIONS, 1934

	No. of patients who had 1 Transfusion.	No. of patients who had 2 Transfusions.	No. of patients who had 3 Transfusions.	No. of patients who had 4 Transfusions.	Multiple Transfusions. When patients had more than four Transfusions, the number for each patient is set out separately.	Total Patients.	Total Transfusions.
Aplastic anæmia	1	1	—	1	5, 6, 6, 9, 17, 33	9	76
Lymphatic anæmia	1	1	—	—	6	3	9
Splenic anæmia	—	—	—	—	8	1	8
Myelogenous leukæmia	1	—	—	—	—	1	1
Leukæmia	2	1	—	—	9	4	13
Purpura	1	1	—	—	—	2	3
Anæmia	1	2	—	—	5	4	10
Pernicious anæmia	3	1	—	—	—	4	5
Secondary anæmia	3	2	—	—	5	5	12
Hæmophilia	1	—	—	—	—	1	1
Septicæmia and pyæmia	5	3	—	1	—	9	15
Gastric or duodenal ulcer	16	4	—	—	5	21	29
Carcinoma of stomach	6	2	—	1	—	9	14
Gastrectomy	8	1	—	—	—	9	10
Post-operative shock	17	3	—	1	—	21	27
Ulcerative colitis	1	4	1	—	6, 6	8	24
Malignant endocarditis	3	—	1	—	—	4	6
Neoplasm of bladder	—	—	—	—	13	1	13
Diarrhœa and vomiting	4	—	—	1	—	5	8
Injuries	4	3	1	—	—	8	13
Acholuric jaundice	1	—	—	1	7	3	12
Secondary hæmorrhage	1	1	—	1	—	3	7
Fæcal fistula	—	—	—	—	5	1	5
						137	321
In addition, 47 other patients suffering from various diseases were given 71 transfusions						47	71
Making a total of						184	392

The British Red Cross Blood Transfusion Service

By P. L. Oliver, Esq., O.B.E., Founder and Hon. Secretary.

BY a pure chance, in the autumn of 1921, as the honorary secretary of a London Red Cross Division, I was asked if I could provide a blood donor for a local hospital. From that request the present organisation has sprung. In 1925 428 calls were received, in 1930 1,627, in 1932 2,442, and, from the increase already apparent this year, it is probable that 3,000 will be reached before December 31st.

In London practically every hospital calls upon the Service to provide it with donors, in 1932 160 hospitals, exclusive of nursing homes and private cases, making use of it. There are a very few professional donors, principally medical

students working their way through their course. It is a condition that every effort should be made to obtain the services of relatives or friends before having recourse to the Service, but there is no information available as to the extent to which this source is utilised; possibly 10 per cent. would be an approximate figure. During 1932, 222 calls were received for patients in nursing homes or private houses, 203 for Guy's Hospital, 197 for St. Bartholomew's, 134 for the London, 86 for King's College and 71 for St. Mary's, Paddington.

The organisation is in the hands of a committee of the British Red Cross Society, on which are co-opted representatives of the various interests involved. The office is at the private house of the hon. secretary, as it has been found more economical for him to deal with night, week-end and holiday calls, than for a central office to be organised with a night and day staff. During 1932 1,033 calls were received in the morning, 824 in the afternoon, 415 in the evening, and 170 at night. 118 arrived on Sundays, and 719 were of an urgent character. The record number of calls in a single day was 19, but on 84 occasions 10 or more were received.

The bulk of the recruits join as the result of lectures and addresses by the hon. secretary, who is continuously engaged in giving talks to such organisations as Scouts, Toc H, St. John Ambulance, and religious, literary and social bodies of all descriptions. No appeals for donors are made at these talks, but a cinematographic representation of an actual transfusion is shown and copies of a pamphlet distributed. Listeners are asked to consider in all its bearings the project of enrolment, and no encouragement is given to joining in the enthusiasm of the moment. All volunteers are examined by the Medical Officer of the Service, Dr. H. F. Brewer, of St. Bartholomew's Hospital. He may be seen daily between 10 and 5, and on Thursdays until 7.30 p.m. At the outset it was made a condition of supplying donors that each hospital should undertake a share in grouping and testing volunteers without charge. Unfortunately, this was frequently done in a very perfunctory manner. Wassermann tests were not made, little attention was paid to the physical condition of the donor or the state of his veins, and a number of cases of wrong grouping occurred, one causing a fatality. Application was then made to the Medical Research Council, and that body nominated Dr. Brewer, paying a moiety of his salary, with the duties of (*a*) inquiring into the problems of blood transfusion, with especial reference to its effects upon donors, and (*b*) to examine, test and group all volunteers, at the time of joining, after every tenth transfusion, and at any other time deemed desirable. Up to this time there had been a certain feeling that the health of donors was not being sufficiently safeguarded, but the appointment gave a renewed confidence, which was shown almost immediately in a reduction of the rate of resignations and an increase in the pace of recruiting.

No inquiry is made as to a donor's reasons for withdrawal, it being recognised that this is a purely personal matter. A letter expressing the thanks of the Society is forwarded, with the hope that the resignation was not dictated by any unfortunate experience. Thus comparatively few reasons for resignation are available. Of 216 received 66 gave no reason, 63 were struck off for failing to return reply cards, 29 had moved out of London, 26 pleaded "reasons of health," and 32 pressure from parents, relatives or employers. From private information received it is evident that the great bulk were due to home or business pressure, but donors feel a natural reluctance to admit this. The greatest factor in causing resignations is undoubtedly the influence of the Press. It is still the practice of all but the most responsible journals to hail isolated cases of transfusion as deeds of almost superhuman heroism, and frequently to close the account with a reference to "the greatly weakened condition of the donor." The reiteration of paragraphs of this description has a most unhappy effect upon the relatives, particularly the womenfolk, of donors. About 200 of our members evade family pressure by having all letters addressed to their offices, but sooner or later the information leaks out and they are compelled to seek peace by withdrawal from the Service.

Another reason for withdrawal is the treatment occasionally met with at hospitals, not necessarily from the point of view of skill, but of general consideration. Donors are called long before they are needed and kept waiting the convenience of the surgeon in unpleasant surroundings. Others are discourteously treated by the nursing staff or hall porters. Others, called in a hurry from business or private affairs, are told curtly that they are not required, possibly after a long wait, and sent back with no explanation that they can give their employers. There are some hospitals to which we never send donors without a certain feeling of apprehension, whilst others, but these are few, can always be relied on for both courteous and skilful treatment. Cases of definitely unskilful surgery are infrequent, but the degree of skill of individual surgeons varies enormously, and a donor can scarcely be blamed if, after a series of successful transfusions, half an hour's probing fails to find a vein, and he declines to serve at

that particular hospital again. Thus quite a number of record cards bear the endorsement "Will not serve at ——— Hospital again."

During 1932 a surgeon, after trying to find a vein for over an hour, asked the donor's permission to make "a small incision." The wearied donor consented, but a cut of $1\frac{1}{4}$ inches was made; sepsis ensued, and the donor was incapacitated from work for four weeks. On a complaint being made the hospital officials took a very aggressive attitude, and stated that the man was totally unfitted to be a donor owing to the smallness of his veins. He was a stoutly built man, but it is significant that he had served eight times previously and five times since, the vein having been found on each occasion at the first attempt without any preliminary incision.

In the early years of the Service, 1921-25, cutting-down upon the vein was practised in 60 per cent. of our cases, and by the end of that period the majority of our members had been unfitted for further donations of blood. The rule forbidding the practice was then instituted, but it was not until 1929 that it was practically eradicated. In 1930 and 1931 there were no cases reported, but in 1932 six occurred, which had grave effects upon the membership, resignations increasing by 30 per cent. and new enrolments falling by 50 per cent.

There are many rival forms of apparatus upon the market, but the individual skill of the surgeon is still the most important factor. Some instruments are of a very elaborate character, but, if only from the point of view of the psychological effect upon a nervous donor, the utmost simplicity is desirable. The method shown on the film which we use for propaganda purposes simply consists of a French's needle, attached to a rubber tube, which discharges into an open beaker containing sodium citrate. This has been of very great value in gaining recruits, prospective volunteers realising for the first time what a very simple matter a transfusion really is. It should be realised that a complicated apparatus, most effective in the hands of its inventor, who has developed his own technique, may be an utter failure in the hands of another surgeon unfamiliar with the various "gadgets." Hence we occasionally get reports that "the apparatus failed to act, and we had to have recourse to another method of extraction."

Whilst the Service cannot dictate to hospitals on matters of internal administration, it is endeavouring to obtain the establishment of certain main principles. These are:—

1. When a donor has been requisitioned a nurse should be detailed to meet him immediately on arrival at the main entrance and conduct him to the operating room or the laboratory. If any delay is likely to occur the reason should be explained. Inquiry should be made as to whether the donor would like some refreshment after—either a light tea or a meal. In many cases a donor forfeits a meal or mealtime to give the transfusion.

2. The nurse (or a successor if the first is required elsewhere) should remain with the donor throughout his visit, seeing that the arm is properly dressed after the transfusion, supplying him with the refreshment arranged, and seeing him off the hospital premises with a few words of courteous thanks. It is not unusual for the whole of the staff present at a transfusion to follow the surgeon who is injecting the blood into the patient, leaving the donor for half an hour or more without attention, and sometimes without the arm being dressed. Many donors are also left to find their own way out of the hospital, possibly at dead of night, without a word of thanks.

3. If a transfusion does not take place the donor should be given a full explanation of the reason, and, if necessary, a letter to show his employers, otherwise he may be unable to obtain leave on a subsequent occasion. The Service should also be notified at once in order that the donor may be replaced on the available list.

4. The recumbent posture should always be used when drawing the blood. During the past five years every case in which the donor has fainted after the transfusion has followed the withdrawal of the blood when seated. The donor should also be recommended to remain prone for at least ten minutes after the withdrawal, although most of our veterans can dispense with this safeguard.

5. Every care should be taken to avoid distressing the feelings of the donors by bringing them into contact with their or any patient. Under no circumstances should the blood be drawn in an occupied ward, particularly in the presence of the patient who is to receive it. Most voluntary donors are naturally of a hyper-sensitive nature, and many are seriously affected by the sight of suffering or even the mere atmosphere of a hospital, and it is a fine tribute to their self-control that they can subdue this repugnance in the interests of humanity. Incidentally it may be remarked that it does not add to a new donor's equanimity to hear surgeons discussing rival technique, or disputing as to the number of ccs. to a pint, both quite frequent experiences.

6. The needle point should be constantly sharpened, and we find that the most successful operators, from the donors' point of view, are those who make a practice of resharpening their needles after each transfusion. A barbed or bent

point, invisible to the naked eye, may cause the sudden jerk which occasionally makes the needle transfix, instead of merely piercing, the vein.

7. A local anæsthetic should always be offered.

8. Iodine should be applied with the greatest care and allowed to dry before the dressing is fixed. Some skins are peculiarly susceptible to its action, and we have had a number of donors seriously incapacitated for a week or more owing to its too liberal use. We have even had instances of wet iodine pads bound to the bare arm after a transfusion, with disastrous results. A more suitable substance is ether, pure, not methylated.

9. A word of appreciation in the annual report of the hospital is useful in attracting fresh donors, and reminds the hospital staff of the conditions under which they serve. It is not unusual for a surgeon or nurse to ask a donor "what else he does for a living," and to express surprise on learning that his work is entirely voluntary. It is not exaggerating to say that the Service saves London hospitals at least £5,000 per annum, yet not one voluntary hospital contributes a penny towards its maintenance, and until quite recently not one mentioned it in its annual report, although donors of a few shillings, fruit, flowers, magazines or tinfoil were warmly and individually thanked.

10. It should be remembered that it is of the utmost importance to retain the goodwill of the individual donor. A single dissatisfied donor becomes a centre of disaffection and dissuasion to others. His membership of the Service is probably well-known, and he finds it necessary to explain his defection to his intimates, and, possibly unconsciously, exaggerates his experiences.

Since the formation of the Service a careful record of the blood groups of donors has been kept, the classification (Moss) being as follows :—

Group 1	110	3.7 per cent.
„ 2	1,284	42.4 „
„ 3	259	8.5 „
„ 4	1,383	45.4 „

The calls upon the Service, however, have been very disproportionate, group 4 averaging 61 per cent. and group 2 only 29 per cent. Even allowing for a certain number of gravely urgent cases where there is no possibility of grouping, it is obvious that group 4's (so-called universal) have been called for unnecessarily, and in 1932, in consequence, a grave shortage of this group was experienced. The medical members of the committee carefully considered the matter, and the staff of the Service were instructed to refuse all calls for "universal" donors where the patient had not been grouped. Within six months over 100 such refusals were recorded. Had they been accepted it would have almost certainly jeopardised the existence of the Service. The committee felt that grouping was so simple and expeditious an operation that they could not accept the plea that there was no time, no serum or no pathologist available in a general hospital. It was further considered that any patient for whom there was the slightest possibility of a transfusion being required should have been grouped on entry into the institution. Much unpleasantness was occasioned by the carrying out of the instruction, the hon. secretary being more than once informed that the patient would probably die through the delay, and that the responsibility would lie at the door of the Service. There are to-day some provincial hospitals which rely entirely upon Group 4 donors, rejecting any volunteers from other groups.

The average cost per case in the London Service is 6*s*. 6*d*., and this figure has not varied by more than a few pence for the last six years. When it is remembered that this includes a 24-hour service, staff salaries, heavy overhead expenses, and all the expenses of donors, this cannot be taken as excessive. In a provincial city or town the area covered would not be nearly so great, and the administrative costs should not be so heavy; thus in calculating the cost of establishing such a service the figure of 5*s*. per case might reasonably be taken as a basis. We find a great deal of apprehension as to the probable commitments, often based on a quite erroneous idea of the amount which will be required to compensate donors for enforced absence from work after a service. In London the expenditure has always been covered by donations received from private patients plus a fee of one guinea per case from municipal hospitals, and consequently no appeal has ever been made, or fee charged, to voluntary institutions. We quite realise, however, that London gets an undue proportion of private cases, owing to well-to-do country patients coming to the Metropolis for treatment. We therefore recommend bodies who are considering the establishment of local services to commence by charging a fee of 5*s*. to voluntary institutions, a guinea to municipal or State hospitals, and five guineas to private or nursing home patients, the latter fee to be reducible on representations from the patient's medical adviser if he does not consider the patient's circumstances warrant it. Had this been the practice in London the largest user of the Service would not to-day be paying more than £50 per annum, a small sum in comparison with its ordinary expenditure, but one which would have permitted the initial financing of scores of provincial services.

Methods of calling up donors for service are as follows :—

(*a*) By telephone to office or home. About 80 per cent. are reachable at business, but only 20 per cent. are available by this means from home.

(*b*) By telephonic messages to friends or neighbours. Rarely available at nights, and not too reliable at other times.

(*c*) Rotarians who will take messages in their immediate neighbourhoods and, occasionally, transport the donor. Like (*b*), this often depends on the personal goodwill of an individual, and, if he is out, there is frequently lack of willingness to take a message.

(*d*) Telephoned express messages to the nearest post office. These cost 9*d*. for 30 words and should be delivered within 20 minutes of sending. Thus a notice of non-delivery should reach us within 45 minutes, but if the addressee is not at home, and the message is taken in to await his return, there may be grave delay.

(*e*) Telephoned messages to the nearest police station. Station officers are almost invariably anxious to help, and when there is a car attached to the station, or even a push cycle available, valuable time is saved. If the messenger can only proceed on foot he may take an hour or more to go and return, perhaps with the news that the donor is out, and he is, moreover, liable to be called away for ordinary police service while on the journey.

(*f*) By hiring a private car to call at address after address until a donor is found at home, reporting by telephone after each call for instructions as to next house to visit or in case call has been cancelled. Meanwhile the official on duty plans out the next nearest donor likely to be available. This is effective in the long run, but very expensive.

(*g*) By telephoning taxi ranks. This is the weakest method of all, as many drivers will go to the house indicated and simply state that they have brought the taxi ordered. They will rarely wait to take the telephone number of the Service, or the purpose for which the person is required. Thus, if the house is unoccupied, or the donor or his household fail to think of the Service, the taxi returns to the rank unable to communicate with us and we can only wait to hear from the hospital whether the donor arrives or not.

Of the seven methods, (*a*) to (*d*) are only available roughly from 8 a.m. to 8 p.m., and (*e*) to (*g*) during night hours. The ideal means for dealing with night calls would, of course, be to combine notification and transport by a car from the office, but the funds of the Service are insufficient to provide this, whilst the few wealthy patients who have been supplied with donors have not expressed their gratitude yet in terms that would enable the purchase of one.

Two suggestions are constantly being brought forward, and as regularly negatived by the committee, who have devoted considerable time to their discussion. These are the insurance of donors against ill results, and the issue of membership badges. Time does not permit of a full discussion here of the pros and cons, but, in spite of the many plausible arguments that have been adduced in favour, the committee are satisfied that anything gained by the adoption of either suggestion would be largely outweighed by the disadvantages.

The point that has been most emphatically impressed upon us is that it is almost hopeless for a voluntary Service to function satisfactorily for a considerable period in cases where the calling up of individual donors is in the hands of the hospital staff, medical or administrative. It soon becomes delegated to a junior official, telephone girl or hall porter, whose only object is to obtain a donor with the minimum of trouble. Inevitably this results in the summoning of the person most easily reached by telephone, and thus a few donors receive calls so frequently as to tire them, physically or through interruption of business, of the work. It is then found that others on the list have removed, or drifted away through loss of interest. Even where the individual surgeons take the responsibility it is found that they have no interest outside their immediate needs, and Mr. A may call on a donor a week or two after he has served for Mr. B. Further, where there is no intervening organisation to check the calls it is found that from 80 per cent. to 90 per cent. are for Group 4's, proving that the grouping of patients does not take place as a matter of routine.

It is obvious that in cases of lack of skill, courtesy or consideration a donor has a very poor chance of receiving proper attention to his complaint when he, as an individual, can only address it to officials of the offending institution. Even in London attempts are sometimes made to "bluff" the Service with a display of medical terminology. Thus a complaint that a donor's arm had become septic after a transfusion was met with the rejoinder that it was due to the donor's own condition, as he was suffering from coryza, and that the Service should not have sent a man in such a state of health. For these reasons the British Red Cross Society will not accept the affiliation of provincial services, nor extend its protection to them, unless they are organised and administered by an independent committee from outside the hospital fully representative of the donors.

Summarised, the first essential of the newly formed Service is to obtain the donors, and the second is to retain their goodwill. The first is simple, but the latter very difficult, especially in a small area where everyone is looking on the project with curiosity, and where a single unfortunate experience is broadcasted by gossip and exaggerated throughout the town. The question of finance is of comparatively little moment, although it is a great bugbear to most promoters. The only other essential is to find a person, a firm or an organisation that will undertake to see that a call at any hour of the day or night will receive immediate attention. This may be a private individual whose telephone is never left, an all-night garage, a Toc H or Y.M.C.A. Hostel, a chemist, an ambulance service, occasionally a police station, or even a nursing home. The clerical work could be done by a volunteer at odd times, who would see that the list of available donors was kept up to date, and all that would have to be done by the telephonist receiving the call would be to communicate with the nearest available donor of the requisite blood group and see that he was dispatched to the hospital.

Over the Port and Under the Table

THE Squire was puzzled—definitely, as one might say, shot up—not that the dinner had been bad or the wine poor; his French chef had, in fact, excelled himself, and the discreet James, unobtrusively filling up each partly emptied glass, had seen that no guest had cause to complain. Nor was it the company in his immediate vicinity; his old friend Cardinal Numba—rather an old bore, perhaps, but definitely a man to be relied upon—had sat at his right hand, and Professor Log, who always showed a certain reticence in his conversation, had been on his left.

No, it was these youngsters, and as he looked across the darkened room he could see at the other end of the table, fluttering in the candlelight, the flushed faces of his nephew's young friends. Squire Root (of Minusone) thought of the responsibilities which were his and sighed. His sister had most inconveniently died when her two children were quite small, and her spouse being incapable of looking after them, it had been incumbent upon the Squire to take charge of his small niece and nephew and try in what way he could to make up for the loss of their parents.

It was the problem of these two which cast a cloud over the evening's entertainment. The boy—young Æther Drag, who had just turned twenty-three and who had had a brilliant career at Cambridge—had always shown some of his mother's eccentricity, and his revolutionary ideas had become very painful to his uncle, who was forced to listen to expressions of opinion which made him shudder, particularly as he could never think of anything to say at the time to refute them, though afterwards in his bath or lying awake at night the most brilliant replies came flooding into his mind. His niece, little Constance Planck, was the apple of her uncle's eye. Her extreme beauty and the simplicity of her nature was a constant source of anxiety to him, and it was with a twinge of jealousy that he once more glanced across the table and observed the noisy young men who were his nephew's friends, and wondered vaguely if any of them should have the temerity to try to take his dear Constance from him.

The Squire was a man who had risen in the world. His name had been a household word for the last few years, but before that was wrapped in obscurity; he had, it was said, done much useful work in his time, though only his intimate friends had known how important this had been, and he himself had never been one to boast of his own accomplishments. As he reached out for the decanter and filled the Cardinal's glass he heard the booming tones of young Aleph Naught from the other end of the room.

"The most extraordinary thing," he was saying, "is the advancement of thought during the last twenty years. Built up from pure reasoning, partly with the help of our old friend the Cardinal we have arrived at a point where we find our philosophy almost—dare I say it?—almost reaching to God." "My dear fellow," interrupted little Psi, Æther's young Siamese friend, "it is not only a question of philosophy, but a release from inhibitions which is so important. It has been quite obvious to the intelligentsia for many years," and here he puffed out his chest a little, "and I verily believe that it is now sinking into the minds of the vulgar plebs, that the only possible solution to a serene existence on the earth is the abolition of the married state." "Of course," young Entropy Morr continued, "this fellow Wells (who is, after all, only the apotheosis of the vulgar plebs) admits that there will always be a percentage of people in any community who will vote for an untrammelled interchange of emotions, but the personnel of that percentage is continually changing, owing to the fact that some people, who have numbered themselves amongst

that select few, perform that distressing function which, for want of a better term, we may call falling in love, and as that engenders the most dangerous, jealous and possessive emotions, they immediately dissociate themselves from their more liberal-minded friends and adopt an entirely reactionary attitude. Fortunately the group is always being recruited from those who have fallen out of love, and so the glorious Torch of Truth is kept continually burning." Here he paused, rather surprised at his own brilliance, and before he could enlighten the company with a penetrating solution of the problem as enunciated by Aldous Huxley he was interrupted by young Omega, who launched an attack upon all knowledge except that exactly contemporaneous with his own.

" The Ancients," he began, " deserve our profoundest disrespect. Their philosophy sets out to make its own difficulties, and then pats itself on the back when it has solved them. They never attempted to deal with problems which have any relation to reality. It is doubtful whether such problems ever suggested themselves to them, so hidebound were they by prejudice; whereas our own superb Whitehead," and here he raised his hands in pious adoration, " what depth! what beauty! what lucidity! what simplicity!"

" I need hardly remind you," he continued, " of my own valuable contribution to the world of knowledge. It struck me that a line A—B might be divided

A————————————M————B

at a point M so that the shorter end multiplied by the whole was equal to the longer and squared. That is :—

$$(MB)\ (AB)=(AM)^2$$

" I took for simplicity's sake a line 144 units long and found that if I made my division leaving 89 units on one side and 55 units on the other these conditions were very nearly fulfilled. You can imagine the excitement with which I greeted this finding—and by a process of calculation, and with the aid of Professor Log and Cardinal Numba's old figures, I worked out the proportion absolutely exactly. What a triumph in the advancement of pure knowledge! The Ancients and their researches into the nature of God! Huh!" and here he took a deep draught at his port amidst a general chorus of approval from his friends. At this point the Squire, who had been listening with an amused tolerance, was surprised to hear the Professor address the company at large.

" There are degrees of impertinence," he was saying, " and in the young most things are forgiveable, but to suggest that because they refrained from making a fuss about them these problems did not exercise the Ancients is, to my mind, infernal cheek. Just because we have no record that an ancient race was familiar with a certain line of thought, there is no reason to assume that they were ignorant of it. Let us take, for instance, the Egyptians; they were interested in the theory of numbers (" ' Arithmetic,' said Schopenhauer, ' is the basest of all mental activities,' " murmured young Aleph Naught). There is a well-known Babylonian and Egyptian series to which I would draw your attention. They started with the numbers 1 and 1."

" What an original idea!" said Omega. " You really mean that Babylonians thought of that?" But the Professor ignored the interruption and continued, illustrating his remarks on the back of a menu.

" They then added these two together—"

" Which made two," shrieked everybody in chorus.

" Exactly," replied the Professor, " and they commenced their series thus :—

1	1
2	

Then by adding 2 to the number 1 above it they obtained 3, thus :—

1	1
2	3

By adding 2 and 3 together they got the next number of the first column :—

1	1
2	3
5	

and by adding this number to the one above it again they obtained :—

1	1
2	3
5	7

By a repetition of the process they eventually arrived at the following series :—

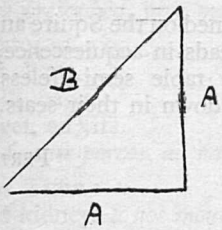
1	1
2	3
5	7
12	17
29	41
70	99, etc.

" Now," said the Professor, " who discovered that the square on the hypoteneuse of a right-angle triangle equals the sum of the square on the two sides?"

" Pythagoras," yawned somebody.

" In that case," replied the Professor, " how can you account for the fact that the figures in this series express exactly that relation getting ever nearer and nearer to it without ever getting there exactly?

"We must remember that these figures were at the disposal of the Egyptians thousands of years before Pythagoras. Thus if we take a right-angle triangle with the adjacent sides equal, the relation



of A to B is given with an ever-increasing degree of approximation as we go down the series. Thus if A=12, to say that B=17 is fairly accurate, but if A=70, to say that B=99 is much more accurate, and so on to any required degree of accuracy."

"Wonderful!" said the Squire. "You really mean that, although they left no trace of it these ancient mathematicians were tackling—and with a very large measure of success—the problems which were hailed as triumphs in their solution thousands of years later?"

"Quite so," replied Professor Log, "but we can hardly assume that their ingenuity was arrested there. Once you have worked out the series by adding the first figure in the column to the one above it and so getting the second it is only natural that you should then try and see what series you get by adding the first figure of the column to the one diagonally above it and so arriving at the second." Here the Professor once more picked up the menu and started to illustrate his remarks :—

"1 1 one and one make two (as before);
1 1
2
Again 2 and 1 make 3;
1 1
2 3
2 and 3 make 5 (as before);
1 1
2 3
5
but here we add 5 and 3 (not 5 and 2 as before), making :—
1 1
2 3
5 8
13 21
34 55."

"That is all very well," began Omega, "but I don't see——"

"If you will take the trouble," remarked the Professor, "to carry this series one stage further you will see that the respective numbers are 89 and 144—numbers to which I believe you attached some importance. You will find that this series represents precisely the relation of AM to AB in the line which you drew for us just now."

"Pure luck, my dear sir," replied Omega. "The Egyptians cannot possibly have realised the significance of their numbers."

"Perhaps not," said the Professor, "but let me tell you a curious thing. For years men have been trying to work out why the pyramids were built in the particular dimensions in which they are. There seems to be no relation between height and area or length and angle until someone realised that if you put their height (481 ft.) over the length of their base (775 ft.), that

$$\frac{481}{775} = \frac{89}{144}$$

this strange proportion which is illustrated by this series. It would seem, my young friend, that they attached quite considerable importance to these very numbers which you so cleverly rediscovered for yourself the other day."

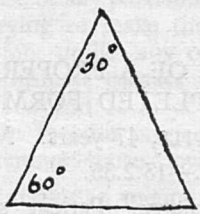
The Squire looked up and saw that Omega had gone quite pale and that his friends were plying him with brandy.

"It is hard to say," continued Professor Log, and by this time his voice had settled into a steady drone, "when these series first assumed their importance. If you take the first column of the first of our series, namely—

1, 2, 5, 12, 29, 70, etc.,

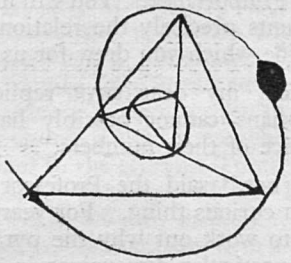
you will find that these numbers represents the relative proportions of the number of teeth in each whorl of most of our species of fir cone, so that Nature herself seems to have attached to them some mystical significance at a very early date.

"The Greeks fell into the same trap; they thought they had discovered some particular virtue in the beauty of the isosceles triangle—



but here again Nature had forestalled them, for it was found that if you constructed another similar triangle inside the original one, and yet another

inside that, and so on, and then joined these points together with a spiral, thus :—



the resulting curve mathematically represented the curve of the shell of every snail that has ever been created. No," he repeated, " it is hard to say when these fundamental conceptions first came into being."

And as he droned on the Squire and the Cardinal nodded their heads in acquiescence, whilst at the far end of the table semi-lifeless bodies were slowly slipping down in their seats.

" PERIPATETIKOS."

How to Use the New Forms

THE Ward Clerks should welcome with open arms the " Clerk's Case Summary " forms which have been issued recently. It was well known that the clerks never had enough work to do, and that time lay heavily on their hands. This innovation will consequently prove a constant delight to them, providing an innocent and happy employment when the evenings prove wearisome.

Now, these new forms are sure to present great difficulties at first, and this article has accordingly been written to coach students in the correct way of filling up the forms. A specimen of a typical form is included.

LESSON

It is quite easy. All you have to do is to answer all the questions on the paper (just like an examination) and fill up the blank bits with odd extracts from the ordinary case-report or the Houseman's notes. There is no need to be shy ; if you think some details of the patient's history or condition are embarrassingly intimate, just open your heart to the Registrar or your Houseman, who will willingly help you out or console you.

About the diagnosis you can be safely vague. If you have absolutely no idea what is wrong with your patient, you can always convert the main symptom into a disease. If you are uncertain about anything else, just make your writing illegible and your language a trifle cryptic or equivocal.

EXAMPLE OF A PROPERLY COMPLETED FORM

Bertie DOOLITTLE, 47 years. Matthew, 13.

Date of Entry.—13.2.35.

Date of Discharge.—Patient sent to Kensal Green.

1. *Chief Complaint.*—Burbling noises in the tummy.

2. *Describe briefly the facts in the history which seem to you to have an important bearing upon the patient's chief symptoms.*—Hare-lip as a child. History of chronic constipation. Sensation of relief on passing water.

Drinks 3 gallons a day and smokes his own cigarettes. Passes hard motions like dark monkey-nuts. Had an attack of diarrhœa when in the Army. Has never had tularemia.

Has protruding navel (patient says present since childhood).

R.E. refused. C.N.S.—Cranial nerves O.K.

3. *Important Physical Findings at Entry.*—Rhythmic thudding noises heard near middle of chest over area about size of hand. Burbling noises in abdomen. Has two brownish tubercles (? thrombosed angiomata), one on each side of chest in front—cannot remember ever having been free from these.

4. *Important Laboratory Findings at Entry.*—++Wassermann ; ++Kahn. (Patient is a sailor.)

Urine—amber, 1,020, acid, nothing.

Respiration—20.

5. *Your own Diagnosis based on the above.*—Chronic borborygmiasis.

6. *What are the Chief Diagnostic Points ?*—The noises heard in the abdomen ; these sounded suspiciously like borborygmi to the Registrar, and, indeed, probably *are* borborygmi.

7. *Discuss briefly the Differential Diagnosis.*—The condition must be carefully differentiated from pemphigus, to which it bears not the slightest resemblance. Neither should it be confused with the specific fevers, which are commonly associated with the appearance of a rash ; nor with tabes, in which the patient cannot cross streets with his eyes shut.

8. *What further Diagnostic Procedures do you consider indicated ?*—Certainly a test-meal or two, sedimentation rate and complete blood picture are

indicated. There can be little doubt that these will greatly benefit the Ward Clerk.

9. *Write your suggestions for the treatment of this patient, giving prescriptions in full, and where special diets are prescribed, give menus.*—

℞ Igniis fatui m. xxx.
Emplast. Pari.
Pot. Belli, aaℨii.
Aq. Bilgei, adℨifs.
Sig. t.i.d. ante porcos, ad nauseam sum.

Luncheon or Tiffin :—
Bevelled kidneys *a nos moutons*.
Chronic fistula and greens.
Inspissated suprarenals on toast.
Scyllium-cake *a la Spit*.
Charcoal biscuits and beer.

Tea :—
Infus. Foliæ Camell. Co., *ad lib*. Bread and jam.

Supper :—
Haust. Sennæ Co.

10. *Make notes of progress, giving dates.*—
14.2.35.—Borborygmi still present.
15.2.35.—Borborygmi still there.
16.2.35.—More borborygmi.
17.2.35.—Noises off.

11. *Final Clinical Diagnosis.*—Gas in the colon (but Shell on the Road).

12. *Anatomical Diagnosis—Autopsy.*—Acute obstruction, and general peritonitis following rupture.

13. *Did you see Operation—Autopsy* ?—Yes, yes.

15. *How do you think he will progress* ? *Will he regain his health* ? *Will he be able to resume his usual mode of life* ?—His progress now depends entirely upon his past history. No, no.

16. *What have you learned from this case* ?—That even the greatest of us can make mistakes.

J. R. A.

Correspondence

Medicine and Politics

To the Editor of the GAZETTE

SIR,—On reading the *Gazette* of March 2nd I was very interested to note that 61 St. Marylebone doctors had sent a letter to their Member of Parliament concerning the National Peace Ballot. This to my mind is an action of great significance and worthy of far more than passing comment. Never before to my knowledge (and, of course, I am open to correction) has an organised body of medical men expressed its collective view on any matter of domestic politics, except in so far as the profession itself has been directly concerned. That this phenomenon has occurred at the present time is a clear demonstration of the fact that the professional conscience has at last lifted itself out of its inordinate preoccupation with its own affairs, and commenced to take a lively interest in things which affect every one of us vitally as individuals. Knowing well the profound apathy which pertains in the medical profession to questions of politics, it is merely a further proof, if one was needed at all, that there is something profoundly wrong with the present state of affairs. It is a very sad, but undoubted, fact that doctors, who, by the very nature of their training and experience are as fit, if not more fitted, to educate and direct public opinion than those individuals who profess to do these things for us, should have so few interests outside their own domestic sphere. There is probably some excuse for this, in so far as they are so fully occupied in the most strenuous and exhausting of all occupations that they have very little leisure to devote to outside activities. That they do not do so is, I think, a great loss to the community, which in most questions of public policy flounders in a welter of uncertainty, at the mercy of fanatics, mob-orators, and the self-interested proprietors of the so-called popular press.

It is significant that amongst those who control our destinies are included a large number of individuals who belong to our sister profession of Law. In fact, it is well recognised that a successful legal career must include an incursion into politics by way of Parliament, hence the anomaly arises whereby our legislators do not include amongst their number a sufficiency of men with an unbiassed and humanitarian knowledge of the rank and file. By making this statement I am not by any means pleading the cause of any particular political party, but am only trying to make the point that the medical profession, unlike any other, is brought into daily and intimate contact with numberless individuals, and would form at least in theory, an ideal medium for the propagation of sound, scientific and common-sense views.

Are doctors inferior in mentality to their legal colleagues ? I would not for one moment subscribe to this preposterous theory. Then why on earth do they not take a more active part in politics ?

The inadequacy and incompetence of government in all parts of the world, which is so glaringly demonstrated to us at the present time, is without doubt heading us slowly but surely towards disaster and the total destruction of civilisation, and at least in one country has led to the complete denial of scientific truth. This has come to pass because we have allowed our lives to be regulated by untrained laymen, and if we do not take care we shall have a new epidemic not of bubonic, but of Teutonic, plague.

There is sufficient proof for my view in the way that medicine has tackled and is still tackling problems in its own sphere. The conquest of typhoid, malaria, cholera, etc., in all civilised countries demonstrates what can be done by men with vision, foresight and judgment of all nationalities acting in concert. Surely men of this type, by applying similar methods, could conquer the disease of War, which, as the last one amply proved, is highly contagious.

Politicians have always been in the habit of applying, or at least in talking about, the " doctor's remedy," which presumably means eradicating the cause of any undesirable condition. They have always found their best analogies in Medicine, *vide*, " the cancer of unemployment." They have always realised that the greatest advances in science have only been brought about by the methods of painstaking research, experiment and logical reasoning. Although they have referred to scientific achievement with admiration and respect, they have never developed the faculty of applying similar methods in their own sphere. For this reason, if doctors and others of like mentality were to enter more actively into the realm of politics, I have not the slightest doubt that the benefit to the community would be of inestimable value.

Yours, etc.,

LOUIS F. BECCLE.

2, Crown Office Row,
Temple, E.C.

" John Keats "

To the Editor of the GAZETTE

SIR,—In your December 22, 1934, issue of the *Gazette* I read your very interesting article on John Keats written by Mr. F. N. Doubleday.

I cannot refrain from writing because for some time I have had an interest in the Keats family, which was increased on visiting Guy's Hospital some four years ago and being received so graciously through the courtesy of the late Mr R. P. Rowlands, at which time I was informed that John Keats had been a dresser at Guy's.

I thought it might be of interest to Guy's to know that George Keats, a brother of John, mentioned in Mr. Doubleday's article, on migrating to the United States came to Louisville. If it should be of interest, on request I will gladly forward a photograph of the street and property where George Keats lived and died.

As an American surgeon, and residing in the city where George Keats spent the greater portion of his life, I am interested in John Keats' sojourn at Guy's.

Yours, etc.,

D. P. HALL.

Brown Building,
Louisville, Ky., U.S.A.

The Oxygen Tent

To the Editor of the GAZETTE

SIR,—I must apologise at having to write two letters in one issue. But there is one point that I must comment on in your reviewer's long and interesting article on the book by Dr. Argyll Campbell and myself on " Oxygen and Carbon Dioxide Therapy." He certainly gave me the impression, perhaps wrongly, that he considered that a nurse, with general training only, could not reasonably be expected to supervise the use of the oxygen tent. Quite so, but this is the case with most new apparatus. After some instruction by the physicist who comes with the tent this is quite possible, and the tent has been used now in a number of Voluntary, L.C.C. and Fever Hospitals supervised by the nursing staff. It is perhaps natural that the complicated nature of the treatment may impress those at Guy's, because in the evolution of the tent here special tests were necessary, requiring supervision; but in practice the tent runs for hours at a time, an occasional analysis of the oxygen content being alone necessary. In the latest modification it is only necessary to move the patient enough to insert a large waterproof sheet over the mattress. The tent is then lowered on to the patient and its edges are tucked in with the waterproof sheet under the mattress. The patient is washed and attended to by untucking the tent at one side.

I have mentioned these points in some detail, because I do not want the impression to get about that the oxygen tent is an apparatus merely of academic interest. It can be used anywhere at any time; it has even been sent late at night to a tenement house in Bermondsey. If any of your readers know of a friendly disposed person who

would present an extra tent or two to the "Oxygen Tent Service," we should have a better chance than we have now of proving its value in the London Teaching Hospitals, and we should be able to deposit a tent of the latest design at Guy's.

Yours, etc.,

E. P. POULTON.

Guy's Hospital,
S.E.1.

The Peace Ballot

To the Editor of the GAZETTE

SIR,—The Peace Ballot is unique; it may be tolerated because it is supported by responsible men from all parties, for though political it is non-party. The League of Nations is probably the only cause that could be brought before the adult population by a "Yes" or "No" ballot without raising widespread and bitter opposition.

The effect of the ballot may be threefold. In the first place it is educational. Faced with the ballot paper, as you yourself say, a decision must be taken, even though it be to throw it away. On the other hand, the individual may feel that he is so ignorant on these matters that he must take further steps to find out the truth. Then there is the effect on the growing army of canvassers; to take part is one way towards a liberal education! Secondly, a large affirmative response must impress foreign countries who do not understand the vagaries of our daily press; already there is talk of a similar movement in France, America and Sweden. Thirdly, it may encourage the Government to know that they will have the country behind them in fulfilling our international obligations to co-operate in preventing aggression, *e.g.*, in the Chaco, in Abyssinia, and the Far East; but considering that practically no responsible politician thinks of forsaking the League of Nations, an overwhelming response in favour of Question 1 will not make much difference. It was to counteract the constant attacks on the League of Nations by certain sensational newspapers that the ballot was first begun; but their political influence is probably small. The average member of the public has more common sense than he is sometimes given credit for.

As regards Questions 2—4, there are evidently certain common misconceptions. To begin with, the questions deal with general principles and not, as you seem to suggest, with administrative detail. For instance, in the Treaty of Versailles the victorious Powers pledged themselves to make some reduction of their armaments in due course. In 1930 this country spent 48 per cent. more on armaments than the average expenditure during the anxious five years just before the war; this figure is now being further increased. France spent an additional 57 per cent., U.S.A. 135 per cent., and Japan 143 per cent. Shall all the nations make reductions, getting rid of those weapons that are specially aggressive such as large tanks, or shall Germany re-arm up to our level? Some all-round reduction should lead to greater international confidence. With the prospect of the Air Pact, Question 3 is not now so urgent, though two or three years ago practically all the large Powers were in favour of the total abolition of military and naval aircraft; there would, of course, have to be inspection and control of civil aircraft. Most people will agree with the League Commission that the manufacture and sale of arms for private profit (Question 4) may lead to undesirable happenings in peace time—witness the results of the Senate inquiry in U.S.A. Contrary to what you say, in the Great War the Government factories delivered arms up to schedule; it was the private firms that failed in their contracts, as described in Mr. Lloyd George's Memoirs. If there is another war, a Ministry of Munitions will obviously be formed at once.

I think you are unduly pessimistic about Question 5. After all, under Locarno our own commitments in this respect are already enormous. Why shouldn't other nations also take a share to secure peace by regional pacts as suggested by General Smuts? But, looking at it from the more abstract point of view, under the Kellogg Pact a nation's armaments can only now exist for defensive purposes; if they are for self-defence, why should not they also be used to help a friendly nation, who has taken part in the general reduction of armaments of Question 2, if that nation is wantonly attacked? Personally, I believe in collective security as the best guarantee of peace. You, Sir, may prefer to say "No" to both 5*a* and 5*b*, but I hope no one will say "Yes" to 5*a* and "No" to 5*b*. In this case he would be bluffing, and openly proclaiming that he was bluffing, since economic measures may quite likely lead to war. You refer to the failure of the League in Manchuria. It is a long story, but it should be pointed out that if, in the autumn of 1931, our Government, in association with the United States of America, had given the same fine lead that they gave this winter in the Saar, the Japanese aggression would probably never have taken place.

Before the last war the young men of the nations who fought had had no opportunity of expressing their views and possibly of influencing international relations; at least this opportunity is being given to the youth of one important nation to-day.

Yours, etc.,

E. P. POULTON.

Guy's Hospital, S.E.1.

Guy's Hospital Dental Society Annual Dinner

THE Guy's Hospital Dental Society Dinner was held at the May Fair Hotel on the evening of March 2nd. During the afternoon the Society held the usual demonstrations, but fortunately the writer has been spared the necessity of having to deliver an account of them. It was with some trepidation that as a mere medico I joined the throng of dentists both newly qualified and aged in the magnificent surroundings of the May Fair Hotel.

We were ushered into an ante-room decorated after the fashion of a Venetian garden and were received by the President of the Society, Mr. Dowsett. Here was the pre-prandial gathering, and here it was that old friendships were renewed and tales of past activities told and retold. Soon dinner was announced, and we all made our way to the dining-hall to seek our tables. Although the writer found himself seated at a table of strangers, the bounteous fare soon dispelled any feeling of embarrassment and reserve, and the rising hum of conversation and laughter proved that similar barriers to enjoyment were being broken down likewise at the other tables. The excellent food and wine disappeared all too quickly, and it did not seem long before the Toast Master asked us to drink to the Royal Family.

The President of the Society, Mr. Dowsett, was the first to rise from his seat—to propose the toast of Guy's Hospital and Schools. He first expressed the general feeling of disappointment at the absence of Mr. Whitbread, who was prevented by reason of temporary ill-health from attending, and then went on to say that Mr. Whitbread could have told us of the misfortunes of Guy's. "But" he said "we must carry on and trust in the Goddess of Fortune for the rehabilitation of our financial resources." He felt sure that in Mr. Whitbread and Mr. Eason we had men who would see us through the present difficulties. He pointed out that, in contradistinction to the Hospital, the Medical School was in a very fortunate financial position. Finally he pleaded for an even closer co-operation between the medical and dental staffs.

Mr. Eason then rose to respond to the toast on behalf of the Hospital. He congratulated himself on having left his glasses at home, so that he was forced to deliver his speech unaided by his notes. However, as he had learnt that the Western Brothers were to perform later, he felt that he was required to spin out his act only until their arrival. This, as the reader may guess, he did extraordinarily well. He drew attention to the fact that he had been at the Hospital for forty-two years, so that he could judge how the spirit of Guy's was being maintained. " It was typified," he said, " by the lack of dignity of the staff and the lack of respect for the staff on the part of the students." Before concluding his speech, he struck a more serious note and told us something of the present heavy liabilities entailed in the running of the Hospital. "But one of the most pleasing features," he said, " of the present time was the considerable amount of money which the patients contributed towards our running expenses." Finally he commented on the magnitude of the gathering (460 guests) and the fact that Guy's turns out 25 per cent. of the dentists in England.

Mr. Bull then responded on behalf of the Schools. He said that one of the most striking features of the present-day student was his conscientious attention to his work, and that, although there were 375 dental students and 550 medical students, there were never more than thirty whiling away their time loafing in the Park. (Cries of, " What about the ' Ship ' ? ") He commented on the celibacy of the Dean's Office, and then seated himself to give way to the " Western Brothers."

The Western Brothers looked even more caddish than ever in their evening dress, and sang about the outposts of empire and what not, and, of course, were encored and re-encored till they had sung all their old favourites.

After the Western Brothers we were given a few moments of respite to collect our wits, and then settled down to hear the remaining speeches. Mr. Doubleday proposed the visitors, and Colonel Howkins and Surgeon-Captain Fletcher responded for the Services.

The speeches closed by the proposal of the health of the President of the Society by Mr. Bulleid. He expressed, what we all felt, our deep regret at the retirement in July of Mr. Dowsett, who is regarded by all as the Peter Pan of the Dental Staff. He gave us some of the details of his magnificent record both as a civil dentist and during the War, and said that he hoped that he would continue to play his part in the active life of the Dental School, although, by reason of the years which he carries so lightly, he will have to retire from the Staff.

Mr. Dowsett rose to thank him for his kind words and to congratulate Mr. Briault, the Secretary of the Society, on the excellence of the arrangements for the Dinner, which we had all enjoyed so much.

D.K.

Reviews

A Manual of Practical Anatomy. Part I—The Upper and Lower Limbs. By THOMAS WALMSLEY, M.D., Professor of Anatomy in the Queen's University of Belfast. Second Edition. Published by Messrs. Longmans, Green & Co., Ltd. *Price* 12*s.* 6*d.*

THIS book is more than a dissecting-room manual, for it contains, in addition to directions for dissecting, sections dealing with the examination of the living model and many comments in the text on applied anatomy. The introductory paragraphs on general anatomy have been enlarged. A full account of surface markings is given, and exercises in the making of measurements used in clinical work have been added. The nomenclature used throughout is that adopted by the Anatomical Society of Great Britain and Ireland, and in most cases the English and not the Latin terms are used, which are far more easy to remember for the student who is faced with a mass of facts when he begins his study of anatomy.

The instructions for dissection are in large type, while descriptive anatomy of the structures met with in the course of dissecting is in small type. There are some good X-ray photographs of joints with a key outline drawing and explanation. It is excellent training for the student to become familiar with normal X-ray anatomy before he is made to interpret the abnormalities he will meet in clinical work. One of the best features of the book will be found in the diagrams. They are not like those in most dissecting-room manuals, which are often partly obscured by the names of the structures. They are mainly outline drawings, and it is left to the student to fill in the names of the parts, insertions of muscles, epiphyseal lines and attachments of ligaments. This feature will enable the student to revise his Anatomy after dissecting, and he will then really have to study the diagrams. The cross-section diagrams are extremely useful, and again the student is to fill in the names of the structures; this is an excellent way of learning the relations of the main arteries and nerves of the limb, of which not enough use is made in most anatomy books.

If the student works conscientiously through this book, he will have a very thorough knowledge of anatomy, and it contains all that he is likely to require for examinations and for reference afterwards. It may be highly recommended to those who are starting work in the dissecting room.

Operative Surgery. By C. R. WHITTAKER, F.R.C.S. (Ed.). Published by Messrs. E. & S. Livingstone, Ltd. Fifth Edition. Pp. 228. *Price* 4*s.* 6*d.*

MR. WHITTAKER has omitted to include either preface or introduction; it is therefore difficult to know what objects he had in view in writing this book, or what functions he intended it to serve. It is clearly not for those reading for higher exams. The clue is, perhaps, given in its inclusion in the "Catechism" Series; it may be taken, therefore, to be an account of the operations and surgical principles which a student may be asked of in qualifying exams or called on to perform in practice. If this is so, the choice of material for the book is all the more bewildering. Within the short confines of 200 odd pages half the abandoned operations of surgery have their paragraphs. The fixing operations—gastropexy, nephropexy and splenopexy—eleven operative procedures, with names, for dealing with aneurysm, an elaborate affair for hepatic cirrhosis, and others of an equally antique flavour are included. This lack of discrimination might have given an historical interest to the book, but nowhere is there any indication which operations have retained their place and which have tended to be discarded in recent years. It is hard to imagine the examining board which requires a student to know four methods of amputating through or below the ankle joint, and yet would excuse ignorance of the methods of opening Kanavel's spaces, of which there is no mention in this book.

A treatise on operative surgery may be expected to help the student revise his Anatomy. Anatomy is given here, but served up in a ladle, as a list of structures which are cut in the incision and calling to mind no picture of the part.

Text-books must frequently be dogmatic, and when so it is best to avoid controversial points and stick to accepted facts. Mr. Whittaker maintains a nicely dogmatic note to the end, but frequently as when he states that complete clefts of the palate are best operated on at the end of the second year, finds himself on disputed ground.

It was with disappointment that we read this book, which was commenced in the hope that here was a work for which there is surely a demand: a book of small size in which selected operations are described as examples of the principles of

operative surgery, in which indications and contra-indications are clearly put, and the procedure given in a manner which will recall the anatomy plainly to mind. In such a book many of the operations included by Mr. Whittaker would find an appropriate place, illustrating the evolution of new surgical principles and the changing fashions of surgery.

Diseases of Children. Edited by HUGH THURSFIELD, D.M. (Oxon.), F.R.C.P., and DONALD PATERSON, M.D.(Edin.), F.R.C.P. Third Edition Published by Messrs. Edward Arnold & Co. *Price* 50*s*.

THE diseases of children comprise practically the whole field of medicine and are not really a special branch, as they tend to be regarded. On this account it would be impossible for any one author to give a really comprehensive and authoritative view on them.

This book consists of a number of contributions written by well-known children's physicians, and as such is an excellent reference book for both students and qualified practitioners. One of the most valuable chapters is that on artificial feeding, a branch of the subject which is of the greatest importance at the present time, and one which is often sadly neglected by the student in those rush hours prior to examinations. The constituents of most of the popular proprietary foods are tabulated in this chapter. Most of the chapters are excellent, are well written and are easily readable, but one serious omission detracts from that on jaundice, namely, the striking response of cases of icterus gravis neonatorum to injections of the mother's whole blood. The last edition appeared in 1929, since when the editors have found it necessary to make many alterations in the text and illustrations to keep the book up to date as far as it is humanly possible.

Clinical Methods. By HUTCHISON and HUNTER. Tenth Edition. Published by Messrs. Cassell. *Price* 12*s*. 6*d*.

THIS is the tenth edition of a book which has become universally popular since the first edition in 1897, and it needs no introduction. It has again been thoroughly revised and much of it has been rewritten. There is a new plate illustrating asbestos bodies in a case of asbestos pneumonokoniosis. The chapter on the urine has been altered quite considerably. The book is one which, as in the past, we recommend most strongly as a *vade mecum* for all students.

St. Bartholomew's Hospital Reports. Vol. lxvii, 1934. Published by John Murray.

THIS volume of the Reports opens with an "In Memoriam" to Dr. William Foster Cross, who was senior anæsthetist to the hospital from 1916 to 1924. His methods were essentially conservative, and he was a great protagonist of chloroform, with which anæsthetic his skill became very renowned. He died in retirement on July 14th, 1934.

The rest of the volume is divided into five articles of considerable interest. The first deals with the problem of peptic ulceration and is a composium written by Professor Woollard, Professor Kettle, Geoffrey Bourne, W. Girling Ball and R. W. Raven. In a section on the pathology of peptic ulcers, Professor Kettle subscribes to the theory that the chronic ulcer is due to the action of a high acid on a portion of stomach devitalised by either localised trauma, vascular spasm, or the action of bacteria. Geoffrey Bourne reports on the results of treating 20 cases of peptic ulcer by duodenal feeding. This is a method of treatment which is rather out of fashion at the moment, and he agrees that its value is very limited. However, he concludes that it has its uses in very long-standing resistant cases, especially when the patient is old and requires active measures for increasing weight, which are not allowed by the Lenhartz diet.

W. Girling Ball and R. W. Raven then give a detailed analysis of the results of the treatment of peptic ulceration by surgical and medical methods at St. Bartholomew's since 1929. Their figures are extremely interesting and tend to indicate that the results of efficient surgical treatment are equally as good as medical.

A. Q. Wells describes fifteen cases of urinary infection treated by a ketogenic diet. The causative organism in all the cases was the Bacillus coli. In seven cases the urine became sterile, but in the remainder no beneficial effect was obtained. The difficulty in some of these was to raise the ketone content of the urine sufficiently high. He shows that the bactericidal action of the urine in the successful cases was dependent on β. oxybutyric acid.

Ian Jeffreys Wood describes eight cases of anæmia in infancy, and stresses the value of full doses of iron and ammonium citrate in their treatment.

Four lectures on toxic goitre delivered before the Derby Medical Society during May, 1934, by Professor F. R. Fraser and Sir Thomas Dunhill then follow. The tremendous value of surgical treatment in this condition is stressed.

A. W. Spence completes this article with an account of some researches into the ætiology of goitre carried out on rabbits and guinea-pigs. He concludes that the genesis of goitre in these animals depends on a deficiency of iodine, which may be absolute or relative, and that a relative deficiency may be caused by goitrogenic agents such as cabbage and methyl-cyanide.

May and Worth's Diseases of the Eye. Revised by MONTAGUE HINE. Published by Messrs. Bailliêre, Tindall & Cox. Pp. 505.

THIS is the seventh edition of the book, which was first produced in 1906 primarily for the use of students and general practitioners, and has continued to be one of the most widely read books on the subject. In its preparation Dr. May has co-operated with Mr. Hine, and the original objects of the authors have been followed. Considerable portions of the book have been rewritten, including the chapters on Glaucoma, Squint, and Detachment of the Retina. It is significant that, instead of a chapter, there is now only a small section on vaccines in ophthalmology.

A large number of clear diagrams form an essential part of the work, which is now rather less a handbook than a book of reference.

Head Injuries. By L. BATHE RAWLING, F.R.C.S. Published by the Oxford University Press. Pp. 86. *Price* 7*s.* 6*d.*

THE preface tells us that this is a book mainly of personal experience, written in the Balearic Islands away from all references. As one might, therefore, expect, it is a book of clinical observations rather than theories, and its practical value is correspondingly enhanced.

In the opening chapter on " Concussion and Compression " is included a most concise and adequate account of the treatment and diagnostic procedures to be conducted in all cases admitted on account of injuries to the head. The author stresses the importance of ascertaining at the earliest possible moment the degree of damage, if any, sustained by brain substance itself. On account of the information to be obtained in this respect from lumbar puncture and of the therapeutic value of the procedure in certain cases, he emphasises the importance of doing an early lumbar puncture in every case.

Mr. Rawlings correlates the clear clinical picture usually presented by a patient suffering from a fracture of the base with the typical lines of fracture which he has observed to follow the impact of force at particular points, and some admirable diagrams are given which help to fix in the mind the varying sequelæ of a blow received on different parts of the head.

In the treatment of depressed fractures of the vault he agrees with those who advocate operation as soon as the initial stage of shock is over. The depressed fragment must be elevated and is best discarded entirely. Though the osseous deficiency may be considerable, it is better to repair or protect this later than run the risk of future epilepsy.

A chapter is given to early and late complications with their treatment. The prognosis in hernia cerebri is, in the author's experience, not entirely hopeless, though repeated lumbar puncture and dehydration therapy may have to be supplemented with more vigorous methods such as enlargement of the bony hernial orifice and contralateral decompression. Even in the presence of a coexistent meningitis the patient, if the inflammation is localised, may survive, the hernia receding and the wound healing.

The book concludes with a section on cranial topography, in which are given all surface markings likely to be of use in the localisation of intracranial hæmorrhage or cerebral lesions.

The eighty-six pages make a slim volume, clearly illustrated and admirably produced. It reads easily, the special points are emphasised and, though quickly finished, it will be kept by many for frequent future reference.

Handbook of Ophthalmology. By HUMPHREY NEAME, F.R.C.S., and WILLIAMSON-NOBLE, F.R.C.S. Published by Messrs. Churchill, Ltd. Second Edition. *Price* 12*s.* 6*d.*

AS a preliminary to the study of the subject this little work is to be recommended, and for a book of its size deals admirably with the more common conditions.

Much that is discouraging and confusing to the beginner in the larger text-books has been omitted, while those reading for examinations will find it a pleasant alternative to the few concentrated pages devoted to diseases of the eye in tomes on general surgery, which usually form the basis of last-minute reading. The printing and illustrations of this readable book make it worth its price.

Sport

Rugby

Guy's v. Old Cranleighans

ON Saturday, March 2nd, Guy's suffered another reverse at home, when the Old Cranleighans were successful by 2 placed goals, a penalty goal and a try (16 points) to 3 tries (9 points).

Both sides had notable absentees, and the Old Boys were further handicapped during the first half when they had to play with only fourteen men owing to Lambert not arriving until the interval.

The visiting forwards played a great part in the success of their side, and Couchman, Kay and Allsup were prominent throughout the game.

Although the scrummages were fairly even, the Old Boys held a decided advantage in the lines-out and combined much better than the re-arranged Guy's pack.

R. C. S. Dick was in excellent form, and time after time both he and Fichardt found it easy to penetrate the visitors defence but they were poorly supported and several good openings were thrown away. Guy's took the lead within five minutes of the start, when Steytler broke through with Stanyon-Jaques in attendance, and Frazer finished off the movement by scoring a try which Dick failed to convert. The Old Boys retaliated, and after excellent work by their forwards Vesey nearly dropped a goal. However, a little later Dick fielded his own kick ahead and sent in de Gregory for a try, which was not converted.

The Old Boys made another determined attack, and eventually Mundy kicked a penalty goal. Within a short time the same player found touch near the corner flag, and from the scrummage that followed Kay slipped over on the blind side, but Couchman's kick fell short, so that half-time arrived with the scores level at six points each.

Immediately after the interval Guy's were the first to score as the result of a magnificent effort by Dick. Receiving the ball on his own line, he quickly found a gap and raced up to the full-back before passing to Fichardt, who ran in from forty yards out.

However, the Old Boys quickly recovered, and the arrival of Lambert made a big difference to their back division. Guy's did not keep the lead for long, and, following some good passing between Couchman and Kay, the latter crossed behind the posts for a try, which he also converted.

Near the end a splendid three-quarter movement ended in Lambert scoring a try, and Couchman added the goal points.

Team.—V. H. Bowles; G. F. Rees, R. C. S. Dick, T. Fichardt, R. M. de Gregory; J. van A. Steytler, K. A. Stanyon-Jaques; M. R. Kark, C. S. Darke, P. K. Hopkins, E. R. Davies, C. F. Ziervogel, W. F. Frazer, P. H. Crampton, T. A. Hale-Monro.

Hockey

Inter-Hospital Cup-tie
Second Round Replay
Guy's v. King's College Hospital

AFTER a drawn game on our own ground, Guy's fielded a stronger team for the replay on February 20th, and the revised forward line showed considerable improvement under very difficult conditions. Heavy rain had rendered the pitch sodden, and continued to fall throughout the game, while the heavy wind and thick mud were all against a fast game.

Guy's opened against the wind and commenced to press hard in difficult circumstances. After about fifteen minutes' play the ball went across from a 25 bully on the left to H. G. N. Cooper at inside right, who slipped past the back and scored with a good shot. Before half-time, C. A. Clarke netted the ball for Guy's, but the goal was disallowed under the offside rule.

At half-time the rain was still falling heavily and the ground had cut up very badly. After about five minutes' play King's equalised when Gillet went out to kick a centre from the King's left wing, slipped and allowed the King's forwards to push the ball into an open goal.

Guy's continued to press hard, but the forwards found the ball very difficult to control on the heavy ground. After about ten minutes Richmond put in a hard shot from a penalty corner, but this was disallowed, and the thoughts of extra time were looming up until C. A. Clarke scored with a splendid shot to give Guy's the game about ten minutes from time.

Team.—E. Gillet; R. G. Archer, G. M. Turner; C. F. Wright, A. G. Richmond (Capt.), G. E. C. Clarke; C. H. Phillips, H. G. N. Cooper, C. A. Clarke, E. B. Rowe, J. B. Franklin.

Result.—Guy's, 2; King's College Hospital, 1.

Squash Rackets Club

THIS season several new fixtures have been arranged, though the team has on the whole been rather less successful than last year. Before the New Year matches had been played, and for the most part lost, against the Jesters (twice), the Rump, King's Club (Richmond), Northampton Chamber of Commerce, the De Havilland Flying School, the R.A.F. (Henlow), Thames House, and Lancing old Boys.

The open competition which is held mainly to discover new talent was successful except in its primary object. There was an entrance of over sixty; in the final H. G. N. Cooper defeated P. W. Clarkson 5-9, 9-3, 9-5, 9-7.

Very few ladder matches have been played, and members are reminded that the last man on the ladder is open to challenge by anyone at the Hospital. The ladder is the only indication of current form on which to pick a Hospital team, and unless challenge matches are played regularly it fails to serve this function.

On Saturday, February 16th, the Leicester Club defeated us on our court by four matches to one.

In the first string match M. A. Partridge lost to Orson Wright 3-9, 9-3, 9-1, 8-10, 6-9.

C. A. Boucher beat D. Daniels 3-9, 9-2, 9-5, 9-0.

C. G. Baker lost to P. Pearce 2-9, 4-9, 7-9.

P. W. Clarkson lost to P. Paget 7-9, 10-9, 8-10, 10-8, 7-9.

J. F. A. Forster lost to A. Grey 4-9, 6-9, 9-4, 9-5, 7-9.

On the Sunday, the 17th of February, a side of four played New College at Oxford. The New College side contained two members of the University team. Boucher again was responsible for our only success.

M. A. Partridge lost to D. O. Wilson 6-9, 5-9, 6-9.

C. A. Boucher beat M. Maclaren 5-9, 9-7, 9-6, 9-7.

P. W. Clarkson lost to — Greeves 5-9, 3-9, 2-9.

C. G. Baker lost to — Harvey 4-9, 3-9, 2-9.

In the Inter-Hospitals' Cup we are this year playing in the first division with St. Thomas's, University College Hospital and King's College Hospital.

Before Christmas we defeated King's by three matches to two—Cooper, Boucher and Clarkson being successful.

We were overwhelmed by University College Hospital and failed to win a match.

On February the 18th, when we met St. Thomas's, the competition had reached a very interesting stage. In order to be sure of maintaining their position at the top, St. Thomas's—they had beaten University College Hospital 3-2—had to win all five matches. To be quite sure that King's and not ourselves were to be relegated to the second division we wanted to win at least one match. These mutually conflicting desires could, unhappily, not both be gratified, and St. Thomas's won all five matches.

M. A. Partridge lost to F. D. Flowerdew 3-9, 7-9, 5-9.

H. G. N. Cooper lost to R. O. McKelvie 4-9, 7-9, 1-9.

C. A. Boucher lost to P. W. Milligan 5-9, 5-9, 5-9.

P. W. Clarkson lost to G. R. Rawlings 9-7, 10-9, 10-8.

C. G. Baker lost to D. P. Van Meurs 0-9, 3-9, 5-9.

Hospital Information, etc.

Pass List

SOCIETY OF APOTHECARIES OF LONDON.
FINAL EXAMINATION.
February, 1935.

Surgery.
*R. W. Cope.

Medicine.
*R. W. Cope *R. M. Outfin

Forensic Medicine.
*R. W. Cope.

Midwifery.
*R. W. Cope.

ROYAL COLLEGE OF SURGEONS.
L.D.S.
February, 1935.
Old Regulations.

PART I.

Dental Mechanics.
F. McCombie. T. L. Clark
W. R. G. Morris

PART II.

Dental Metallurgy.
D. W. Bugg W. R. G. Morris
T. L. Clark E. W. Sleeman
F. McCombie E. Strasburger
R. W. Marston

* Have completed the Examination

PART IIIa.

Anatomy and Physiology.

D. W. Bugg
D. C. J. Constable
D. W. Harvey
D. B. Sedgwick

PART IIIb.

Dental Anatomy Physiology.

H. M. D. Archibald
O. B. Brears
G. M. A. Brown
P. M. Calder
D. F. Denniss
W. M. Glen
S. W. Guilding
F. K. Johnson
J. C. Prosser-French
B. W. P. Roberts
E. Strasburger
H. B. Thornton
E. du Toit
W. K Weighell
M. Wykes
W. Wylde

New Regulations.

PART I.

Dental Mechanics and Dental Metallurgy.

E. Allen
P. A. Chandler
A. J. Clegg
S. Farro
B. Leton
E. A. Moore
H. B. Shay
J. E. C. Thorpe
T. L. Weston

PART II.

Anatomy and Physiology.

W. B. J. Baskin
A. Black
S. E. Burt
F. J. H. Edmonds
J. H. French
J. W. S. Harvey
K. A. Irish
D. C. Jackson
G. S. Jones
B. Leton
A. E. Parrott
R. D. Pett
A. D. W. Robertson
J. M. Rose
W. B. B. Southwell
P. D. Spooner
E. D. Stanhope
J. E. Tudor
W. H. West
E. W. Wright.

PART III.

Dental Anatomy.

W. B. J. Baskin
G. C. Blake
A. J. Clegg
N. M. Cripps
C. M. W. Debenham
M. Frost
J. N. Hall-Jones
R. P. Hancock
E. A. Moore
J. E. Tudor
P. D. Wharton

FINAL EXAMINATION.

February-March, 1935.

PART I.

Surgery.

N. A. Blay
C. E. Coltman
H. F. W. Dornhorst
C. H. Greaves
W. J. R. C. Morgan
R. F. P. Piper
J. F. M. Sampson
E. Strasburger
C. A. Styer

PART II.

Dental Surgery.

H. Bradley-Watson
R. S. Cook
W. J. Drummond
D. P. Fox
J. J. Gatterell
R. E. Goodrich
H. G. Hexter
W. B. Hubbard
R. G. Hunt
W. S. Jackson
R. F. P. Piper
F. A. Rogers
J. W. Turner

CONJOINT BOARD.

FINAL EXAMINATION.

January, 1935.

Pathology.

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J. A. J. Hammond
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M. J. Lange
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A. E. K. Salvi
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A. B. Wayte

Medicine.

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L. Merrill
P. Sinha Ray
F. J. R. Stoneham

* Have completed the examination.

Papers by Guy's Men

C. P. Symonds. Disturbance of cerebral function in concussion. *Lancet*, 1935, i, 486.

Peter G. McEvedy. Gall-stones and cholecystitis. *Clin. Jour.*, 1935, lxiv, 3.

W. H. Ogilvie. Some points in the operation of gastrectomy. *Brit. Med. Jour.*, 1935, i, 457.

F. A. Knott. Indications and technique for blood transfusion. *Practitioner*, 1935, cxxxiv, 331.

W. A. Carden. Notes on a case of psoriasis. *South African Med. Jour.*, 1935, ix, 81.

Change of Address

Charles E. Salter, "Ringinglow," Merrion Avenue, Exmouth.

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Eds. { D. P. K. / P. W. C.

GUY'S HOSPITAL GAZETTE

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PASSIM

THE chief reputation of the Hospital rests upon the clinical training and opportunities for practical work which it has been possible to obtain here. With the increasing numbers that are entering the wards it is important that other changes which militate against the easy access of students to clinical material and adversely affect the teaching should not be allowed to continue.

The present division of the Registrarships on the Surgical side into two operating and two teaching posts has been in operation long enough for some attempt to be made to assess its value. Those most affected by the change are the Registrars themselves and the Ward Clerks attached to the surgical firms, and we may consider first how the surgical teaching at the Hospital has fared, and secondly, how the surgical registrar appointment has been affected.

The ward clerk is now the member of a class twice as large as formerly. The direct results of this increase in size are threefold. Firstly, he loses personal contact with the registrar, and in rounds of 18-20 may spend the greater part of the appointment unknown to him by name. Secondly, on account of the size of the class it is only possible for the registrar to go over half as many cases as were previously seen on the morning rounds. Thirdly, only half these cases belong to any one ward clerk's own firm ; a half of the cases demonstrated, therefore, he sees once only, and is unable to follow their subsequent progress. Under the old system the registrar was present on afternoon rounds and in the theatres. On him mainly devolved the business of correlating the pre-operative clinical signs with the findings at operation. His constant presence on his surgeon's rounds helped to produce agreement in the teaching of controversial subjects. The standing orders issued to the teaching registrars under the new regime make it clear that he need not be present in the Hospital during the afternoon. It would thus be possible for him to pass the whole year without coming into contact with his surgeon. There is a consequent loss in uniformity and continuity of the teaching of the surgical firms.

The lack of official teaching from the operating registrars is most severely felt by ward clerk and dresser during the take-in week. As the majority of abdominal emergencies are admitted after mid-day, pre-operative teaching on the acute abdomen has practically ceased to exist. Teaching on fractures has suffered similarly. Indeed, the difference in the value of a take-in under the old and new systems is to no one more apparent than to dressers who, as ward clerks, had registrars who taught, but as dressers merely assist in the making of plasters for fractures on which there is no demonstration of signs or discussion of treatment.

When we turn to consider reasons for which the teaching of surgery can be said to have benefited, there appear to be none, nor were there from the first any grounds for supposing there would be.

Of the registrars, the teachers appear to have derived some benefit from the change. Their afternoon freedom permits their encouraging a speciality by obtaining jobs outside the Hospital. Reverting to the operating registrars, we must be permitted a little amazement at the amount of

work their position entails. They take-in on alternate weeks. During this week they are responsible for the treatment of emergency cases, and are on call at any hour of the day or night. In addition, on three mornings a week they do Out-patients. These are started at 9.30 and they see their share of 20-80 patients; if the Assistant Surgeon is unable to attend they see them all. During Out-patients they must supervise the Varicose Veins Clinic and themselves inject hæmorrhoids ; they are also responsible for the care of those ambulant fractures who need plasters applied or removed. On two other mornings the take-in registrar conducts minor operations at 9.30. At 4.30 on four afternoons he can be asked by one of the surgeons to finish an operating list and this may take two hours to complete. It is not to be expected that he should be called upon at any hour to teach on acute cases, and, as has been said, teaching on these cases is non-existent except in those few admitted at appropriate times for the surgeon's round. The registrar's alternate weeks present pictures of only comparative calm. There are his Out-patients with their attendant responsibilities, and such operating lists as he may be called upon to complete.

It might appear that the position of operating registrar entails so much work and responsibility that much of the value of what should be a first-rate appointment is lost.

To us the conclusion is inevitable. The teaching of surgery has suffered enormously, and this loss has been offset by no improvement, operative or executive, in the functioning of the surgical firms. It is said that this change took two years to introduce ; we are appalled at the possibility that another two years may pass before it can be thrown out.

▭

AMERICAN and Continental visitors often ask us to direct them to the various clinics in the Hospital, such as the gastro-intestinal, the neurological or the pædiatric, and express surprise when we offer a somewhat hazy explanation of the manner of distribution of the beds, and finally excuse our haphazard methods by saying that, of course, most of the staff are general surgeons or physicians and enjoy covering the whole field of medicine. This always evokes a look of surprise on the face of our visitor, who then often as not proceeds to tell of the wonderful clinics they have in his country, and how Professor So-and-so treated hundreds of cases of lymphatic leukæmia with some weird extract and treated an equally large number with deep X-ray and was able to make a comparison of the therapeutic results and thereby add another link to the chain of knowledge.

We cannot help but be mildly impressed by these stories, and we are inclined to agree that the distribution of a proportion of the Hospital beds amongst several specialised clinics would bring advantages. It would be easier to make controlled observations on the pros and cons of different forms of treatment, and the various clinics could be used for advanced teaching during the latter part of the students' curriculum. During recent years several clinics have been started in the Out-Patient Department, and as an O.P.O. we remember how delighted we were to be able to transfer our menopausal patients to the endocrine clinic and the chronic asthmatics to the asthma clinic, where treatment could be more detailed and advice more expert. Is it possible that in future years we may see this system of clinics, which is so much in vogue in other countries and which has crept into the Out-Patient Department, extended to the general wards ? We understand that at the moment the various special departments are bargaining with one another and with the general physicians for more beds, and if we are to judge from the number of their respective out-patients and the length of their waiting lists it seems that their demands are justified. The general staff will not relish acceding some of their beds to the special departments, and it seems almost inevitable that Clinical Ward, which is nobody's baby, will in the future be devoted to other purposes than it is at present.

▭

THE Residents' Ball was held at the Grosvenor House on March 22nd. The demand for tickets was so great that almost at the last minute it was decided that it would be impossible to hold the Ball in the small ballroom, which in past years has been adequately large, and the large ballroom (the old ice skating rink) was commissioned. Supper was served around the dance floor, and after supper a cabaret was held. This included an acrobatic dancer, a troupe of dancing girls, and the incomparable John Tilley, who delivered his well-known burlesque of a chairman's speech at a company's annual general meeting. There were over 500 guests, but there was ample room for even the most persistent habitués of the dance floor to display their skill, which was a real treat. Our most sincere thanks are offered to Lady Shipway for acting as hostess and to Mr. T. E. Howell and Mr. N. M. Jacoby for the time and energy which they spent on the organisation. We sincerely hope that the number of guests which,

we believe to be a record, will be maintained in future years.

THE 1st XI Hockey Team deserves our congratulations for having reached the Final of the Inter-Hospital Hockey. The match is to be held on Wednesday, March 27th—the day we go to press—and is against St. Thomas's Hospital. We hope to include an account of the match in the next number.

WE wish to congratulate the following on their appointments as clinical assistants in Clinical Ward :—

J. A. J. Hammond.
R. McDonald.
J. H. Mayer.
J. E. Spalding.
D. P. Stevenson.
F. Taylor.

The Decline in the Phthisis Mortality in England

A Paper read before the Guy's Hospital Physical Society on 21st February, 1935, by Professor G. P. Wright

SOME years ago Louis Cobbett, of Cambridge, wrote an excellent book on tuberculosis, and in one of the earlier chapters he makes the following remark: "The decline in the death rate from tuberculosis is one of the most important and astonishing facts in medical history." It is important, of course, for even now an enormous number of people die from it every year—more, except for cancer, than from any other single cause. At the present time, when we can justly look with considerable satisfaction at our success in eradicating preventible diseases, about 40,000 persons die every year from tuberculosis in this country, and what is even worse they only too often die in the active years of early and middle adult life.

But mortality is not the only criterion of the importance of a disease. For many infectious diseases we have a figure, commonly termed the "Morbidity Rate," as well as the "Mortality Rate"; the proportion of people who fall sick with the disease as well as of those who actually die from it. At present, unfortunately, we have no satisfactory morbidity rate in this country for tuberculosis such as we have for many of the common infectious diseases, so that to this extent we are still in the dark as to how widespread tuberculosis really is. Nevertheless we can make what is probably a pretty close estimate, for surveys are often possible for particular diseases, tuberculosis amongst them, on a scale restricted to a town or county which would be too expensive to organise for a country as a whole. Actually a number of tuberculosis surveys have been made in several different countries, and their findings agree reasonably well, so that we are fairly safe in saying that for every death from phthisis there are about four cases of "open" and about ten cases of "active" pulmonary tuberculosis. So that if 40,000 persons die annually from phthisis in this country, there are upwards of a quarter of a million cases of "open" and nearly half a million cases of "active" tuberculosis of whom only a fraction are segregated in hospitals and sanitoriums. Clearly the tuberculosis problem is still one of the most important we have to face.

Now this evening I am going to discuss what we know of the history of the tuberculosis problem in England, and why, though its ravages are still appalling, they are becoming continually less and less severe. For the more we know of the causes of this remarkable decline, the more chance we have of further accelerating it.

The official general registration of deaths in England and Wales with reference to their cause began in 1838 (before that they were merely enumerated), and from soon after that year we can confidently begin to chart our mortality curve.

Though the figures for the earlier years are certainly not as accurate as those collected nowadays, they probably underestimate rather than overestimate the mortality, and we can, I feel sure, accept the steady and progressive decline shown in this chart as correctly recording the actual changes. I have also marked on the diagram two dates of immense importance in the history of tuberculosis: Villemin's proof (1865) of its infective nature and Koch's discovery (1882) of the tubercle bacillus. Perhaps this is why Cobbett used the word "astonishing" as well as "important," for neither of these two great discoveries has affected the steady course of the curve; they neither started nor accelerated the decline.

As we look at this curve several questions at once occur to us :—

1. Firstly, what was the course of the phthisis mortality in England before registration began in 1838?

2. Secondly, why has the mortality been declining, long before the discoveries of Villemin and Koch might reasonably be expected to have affected it?

3. And finally, a question which arises from the last one, what direction can we expect the curve to take in the future?

The answer to our first question must, of course, be largely conjectural. It seems very unlikely that we should find the mortality curve continuing to climb at the same slope for very far into the past, though we do know from the Bills of Mortality which began to be kept in the time of Queen Elizabeth that the death rate from all causes was very much higher then than it is to-day. Even at the beginning of the last century Malthus, in his famous "Essay on Population," regarded a general death rate of 25 per 1,000 as an unusually favourable one, a figure just over twice that occurring at the present time. But even if we make allowance for a steady fall in the general death rate, it seems clear that at some time in the past there must have been some peak, or at least some plateau, in the tuberculosis mortality curve. Else, as Karl Pearson has pointed out, five hundred years ago everyone would have died from phthisis.

It happens that in Sweden in the middle of the 18th century, and in the City of London still earlier, many parish registers were kept which not only enumerated the deaths, but also recorded their causes. The Swedish registers have been carefully examined by Sundbarg and the London ones by Brownlee, so that we can gain some idea, hazy perhaps, of what toll phthisis was taking long before vital statistics began to be properly compiled.

It seems that our previous idea of there having been a peak or plateau in the mortality is justified, for the mortality began to rise about the middle of the 18th century, slowly climbed to its summit in the early years of the 19th century, and has steadily declined from then to the present day. Not only in London, but in Sweden and certain other countries whose vital statistics only cover a shorter period, the phthisis mortality curve has shown a rise in the earlier years and a decline in the more recent ones. Bavaria, Switzerland and Ireland show curves of this form, though in these countries the peaks were at different dates, and Japan appears to have scarcely yet reached its peak, or at most only just to have crossed it in the last few years.

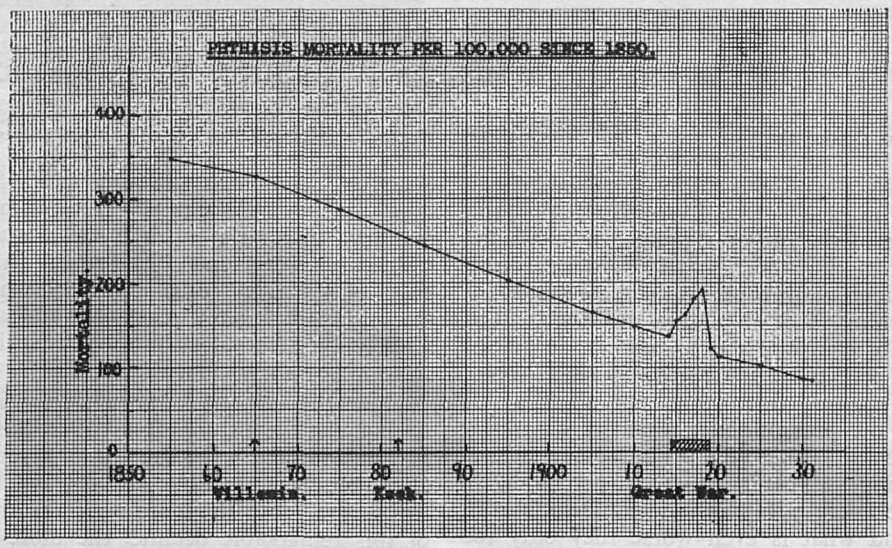

Fig. 1

At first one might be tempted to suppose that the high English figures at the beginning of the 19th century resulted from the remarkable social changes that took place during the Industrial Revolution with the rapid development of overcrowded factory towns in the North and Midlands. From such books as the Hammond's "History of the Town Labourer" one can readily understand how such places could form hot-beds for diseases like phthisis. Yet, though we are now quite certain that bad social conditions contribute to the spread of tuberculosis, it seems improbable that they were entirely responsible, for we find

that similar rises have taken place in other countries when no such radical social changes were in progress. It has been suggested that the rise and fall of phthisis in all these countries was really an epidemic, of exceptionally long duration when contrasted with other well-known epidemics, but nevertheless an epidemic wave some 150 years long which has spread over the civilised world and, influenced by local factors, has attained its crest at different times in the various countries. If such a view be correct, and you must bear in mind that it is only an hypothesis, we are living at the present time in the later stages of a vast epidemic, and the fall in the tuberculosis mortality in England in the last hundred years is merely an example of the decline that epidemics naturally undergo. We must not deceive ourselves, however, into believing that in calling it an epidemic we have in any way explained the progressive decline. It is only in recent years that epidemiology has changed from being merely a descriptive science into an analytical and experimental one, and though we now know some of the factors responsible for their waning, we are not yet in a position to give a reasoned and complete account of how epidemics actually die out.

Having dealt with the possible pre-history, as we may call it, of the mortality curve, let us attempt to answer the second question—the causes for the decline, or, if you prefer, the reasons why this particular epidemic has waned. The disappearance of some epidemics depends on the progressive loss of virulence of the organisms that cause them, and it is, of course, possible that tuberculosis is amongst them. Is there any evidence which would make us believe that the tubercle bacillus has been gradually losing its virulence during the last hundred years? Any direct answer to this question is clearly impossible, since the bacillus itself has only been recognised for some fifty years, but so far as we can judge from circumstantial evidence there seems no reason to believe that it has. In fact, experimental work has indicated that, in the matter of virulence, it is amongst the most stable of the pathogenic organisms, though, as Calmette and Guerin have shown for their strain the B.C.G., it can, like many others, become greatly attenuated when it is cultivated for a long time outside the animal body.

There have been a number of examples in medical history where a disease, at first severe, has gradually become milder or even disappeared altogether under circumstances in which the only reasonable explanation seems to be that the virulence of the organism has declined. One of the best known of these is the famous "Sweating Sickness," which suddenly appeared in 1485 in the army of the Duke of Richmond, afterwards Henry the Seventh, a few days before the battle of Bosworth. The disease, which was previously quite unknown to the physicians of the time, was a serious one, and after the advance of Henry's victorious army it became epidemic in London and caused many deaths. Several epidemics subsequently occurred, each less severe than the last, and the disease finally disappeared about the middle of the 16th century, apparently from the decline in virulence of whatever organism caused it. The decline in the severity of scarlet fever in the last fifty years, the almost complete disappearance of leprosy in England, and possibly the moderation in syphilis since its first introduction into Europe, may all be due to a reduction in the virulence of their causative organisms.

The probability is, as I have already said, that the tubercle bacillus has not lost any of its virulence in the period we are considering. In man, phthisis shows very varying degrees of acuteness and chronicity. We have caseous tuberculous pneumonia, or "galloping consumption," as it used more graphically to be called, at one end of the scale, and chronic fibroid phthisis, lasting many years, at the other. Yet the tubercle bacilli from both types of case show much the same degree of virulence when injected into animals, which is, of course, the only way in which we can compare their virulence quantitatively. The difference in the clinical course in the two cases depends on differences in their resistance, and not on one having been infected with a virulent and the other with an attenuated strain of tubercle bacilli. That this is the correct interpretation is shown, I think, quite definitely by the effects of tuberculosis suddenly spreading into a human population which previously had been almost free from it.

Before the last war the medical authorities of the Austrian army found that the conscript recruits from the agricultural provinces of Croatia, where tuberculosis was then relatively uncommon, were afflicted with a shocking mortality from phthisis when they were housed in barracks, while those from Vienna, who were already accustomed to the confined life of a great city, scarcely suffered at all. This same contrast between the susceptibility of the peasant and the resistance of the townsman has also been observed by the army medical services in other countries. Another interesting example of the same kind was disclosed during the spread of road and railway communications into the northern parts of Sweden, where, as the villages previously almost inaccessible became freely opened up to contact with the remainder of the country, a sudden rise took place in their tuberculosis mortality.

I have specially chosen these examples because they are quite free of what I consider is an important objection to those commonly cited; the fearful results often following the intermingling of Europeans with native races, because, in both the instances I have given, the highly tuberculised and the relatively un-tuberculised people were of similar ethnological stock. The acute and widespread phthisis which followed the introduction of tubercle bacilli into these " virgin " populations shows that the organisms still miss no opportunity of taking their toll of human lives, and certainly gives no ground for supposing that they have lost any of their former virulence.

If the virulence of the tubercle bacillus has not declined is there any evidence that the resistance of Europeans has appreciably increased? Are the peoples of the great industrialised Western nations gradually becoming more immune to tuberculosis? Now resistance or immunity to tuberculosis may take one or more of several forms, which we must try to keep clearly distinguished from one another because their differences are not only of theoretical, but also of great practical importance. On the one hand we may be concerned with an inherited natural immunity, and on the other with an individually acquired active immunity resulting from an infection which has healed, or at any rate become quiescent. These two forms of immunity, the natural and the acquired, are entirely different from each other.

Whether there exists an inherited natural immunity, fostered by the continual natural selection of the more resistant people, in a highly tuberculised community like England, is still debatable. At first sight it would seem, from its very varying destructiveness among different races, that some of them must be more naturally resistant than others. But it is exceedingly difficult to prove that this is the case, since so many other points of racial difference in culture and customs as well as in inheritance, confuse the issue. The Jews, who in Europe have long almost confined themselves to life in cities, are often quoted as an example of a race in which time and constant exposure to infection has gradually eliminated the naturally susceptible, leaving survivors whose descendants at the present day are relatively more immune. Instances of the appalling ravages of tuberculosis in primitive native races after contact with Europeans are often similarly produced to support the same contention. As an example of what may happen to native people I will read you a brief and dramatic account of such an event which was written by Robert Louis Stevenson during his life in the South Sea Islands. " The Marquesan race," he wrote, " is perhaps the handsomest extant. Six feet is about the middle height of males; they are strongly muscled, free from fat, swift in action, graceful in repose. To judge by the eye there is no race more viable, and yet Death reaps them with both hands. When Bishop Dordillon came to Tai-O-Hae he reckoned the inhabitants at many thousands; he was but newly dead, and in the same bay Stanislas Moanatini counted on his fingers eight residual natives. Another tribe is said to have numbered some four hundred, when smallpox came and reduced them by one-fourth. Six months later a woman developed tubercular consumption; the disease spread like a fire about the valley, and in less than a year two survivors fled from that new-created solitude. Early in the year of my visit, for example, or late the year before, a first case of phthisis appeared in a household of seventeen persons, and by the month of August, when the tale was told me, one soul survived, and that was a boy who had been absent at his schooling."

During the last war the French had a similar experience with their native African troops, and it is quite likely that if they should ever be used again in another European war, the conscripted natives will suffer greater losses from tuberculosis than from bullets.

I might be tempted to deal more fully with this interesting topic of natural immunity if I thought it would throw any substantial light on our main subject this evening: the decline of tuberculosis mortality in England. But I cannot believe that natural selection could have brought about any very radical changes in the genetical constitution of such slowly breeding animals as human beings in the course of the hundred or so years in which our decline has taken place. It is true that tuberculosis, in contrast to cancer, for example, kills its victims before and during the sexually active period of life, but, even so, four or five generations gives very little opportunity for natural selection to have had much influence.

The other possibility, that a larger proportion of English people are nowadays actively immunised by sub-lethal, or even perhaps sub-morbid, infections with tuberculosis, is worth more serious consideration, and in this case the lack-of-time argument that I have just raised against natural immunity can be no valid objection. Perhaps it will make my discussion clearer if I say at once that I do not consider that active immunisation has contributed much to the decline, though I am well aware that the question is still highly controversial and that many authorities would oppose me. I am not, of course, denying that some grade of active immunity develops in persons infected with tuberculosis. But it does seem clear to me

that active immunisation could only be an important factor in causing the decline if tuberculous infections in the community were at least as widespread at the present time, if not actually more so, than they were formerly. Otherwise how could a larger proportion of the community acquire their active immunity and escape the development of phthisis later? On the face of it this is hard to believe, for with many fewer deaths from tuberculosis, and therefore many fewer cases of open phthisis at large to spread infection, it is difficult to understand how the infection rate in the community can be as high now as it was in former years. But in this case the accumulation of evidence in recent times allows us to base our opinions on something a little more tangible than mere conjectures.

Modern evidence for the general incidence of tuberculous infection has been mainly derived from two sources—the post-mortem room and the now numerous statistical studies with the tuberculin skin reactions. The results of the former are now well known, and we come to accept with equanimity figures which, when they were first produced by Naegeli, appeared incredible. But beyond drawing attention to the widespread extent of the infection they give us no help in settling the question immediately before us. What we require for its answer is a satisfactory comparison of the tuberculosis infection rate at the present time with that of a similarly aged population in the same locality some years ago.

Some of you may feel hesitation in accepting a positive tuberculin skin reaction as being satisfactory evidence of present or past tuberculous infection. Though it may sometimes err in individual cases, let me try to give you more confidence in its legitimate use for statistical purposes.

A few years ago a committee of the British Medical Research Council made complete post-mortem examinations, including the staining of smears and biological tests, on 114 cattle to which intracutaneous tuberculin tests had been applied shortly before they were slaughtered: 37 out of the 39 positive reactors were proved to have been tuberculous by the inoculation of guinea-pigs. The other two animals showed naked-eye lesions that were in all probability tuberculous, but inoculations failed to kill guinea-pigs. Conversely, the 75 animals that were free from tuberculosis at the post-mortem, and whose smears and guinea-pig tests were negative, were non-reactors to tuberculin.

The Medical Research Council have not been the only investigators to find such a close agreement; others have found the same, and it is now generally agreed that there is seldom more than a two or three per cent. discrepancy between the tuberculin tests and the post-mortem findings in cattle.

Supposing, then, that we accept the tuberculin test as a satisfactory one, is there any evidence that the number of positive reactors amongst human beings is less now than it was formerly? Two series of observations, one made in the United States and one in Norway, give us information on this point. The first was carried out in connection with an extensive and very instructive experiment made by one of the great American life insurance companies, in which they selected the medium-sized residential and industrial town of Framingham, in Massachussetts, and compiled a health census of its population over a series of years. The results showed, amongst other things, that in 1926 the percentage of positive reactors amongst the children of Framingham fell 23 per cent. below that of 1917, nine years earlier, while in the same period the tuberculosis mortality for the State of Massachussetts sank from 144 to 73 per 100,000 persons.

The second study was carried out at Trondheim, in Norway, over a longer period of time, and again the proportion of children reacting positively fell considerably, while the tuberculosis mortality for Norway as a whole fell from about 210 to 160 per 100,000 persons.

The supporters of the view that active immunity is an important causal factor in the decline in the mortality are faced with the awkward fact that in both these places the mortality rate and the infection rate are falling simultaneously. Consequently, I cannot accept the explanation that the decline in phthisis mortality can be ascribed to an increase in the proportion of persons who become actively immunised during their earlier and more susceptible years.

We have now tried in turn to see whether this possibly epidemic wave of tuberculosis is declining as a result of the failing virulence of the tubercle bacillus, or of the natural selection of resistant people, or of a more widely spread active immunisation at the present time, and we have come to the conclusion that none of them can satisfactorily explain it.

What is to us the apparent commonplace that health is intimately linked with social conditions—that health, in short, is largely a purchasable commodity—was one of the greatest medical discoveries of the 19th century. Let us turn, therefore, from the immunological to general social factors to see whether they can offer us any better solution to our question, a solution which is not merely a loose generalisation, but one which

will withstand critical examination. Here again we are beset with difficulties, for while our compilation of mortality rates goes back only a bare hundred years, our knowledge of the really relevant social factors covers an even shorter period still. It is only for the last thirty years, for example, that satisfactory information has been published on the housing conditions in cities and large towns. Under the circumstances undoubtedly the best available index that we can get of the changes in the social conditions over the whole hundred-year period we are examining is change in what is termed the " real wages." Let me emphasise at once that real wages are not the actual money wages, but the amount of actual goods, housing, clothing and food that a man can purchase for himself and his family with the money that he gets paid every week for his work. " Real wages " are, consequently, the best single criterion we have for comparing the material welfare of much the largest section of the population from one year to another. I have compared in Fig. 3 the tuberculosis mortality curve from 1850 onwards with the changes in the level of real wages in the last hundred years as calculated by Sir Walter Layton.

The relationship between the two seems quite definite to me; each curve is almost the inverse of the other. Rather striking, too, is the sharp simultaneous recessions that both curves take during the war from 1914 to 1919, when severe physical privations were accompanied by a suddenly heightened tuberculosis mortality. Here, then, for the first time we have found a reasonably close relationship between the phthisis mortality curve and that of another condition of society, its " real wages " or its relative poverty, whichever term you prefer. With this to encourage us, let us pursue the matter further, to discover, if we can, which of the main components which together constitute " real wages " is mainly responsible.

If our information on the extent of overcrowded housing is of recent origin, it can be said that our information on the corresponding shortage of food and clothing is still almost non-existent, except for a few special *ad hoc* inquiries that the Medical

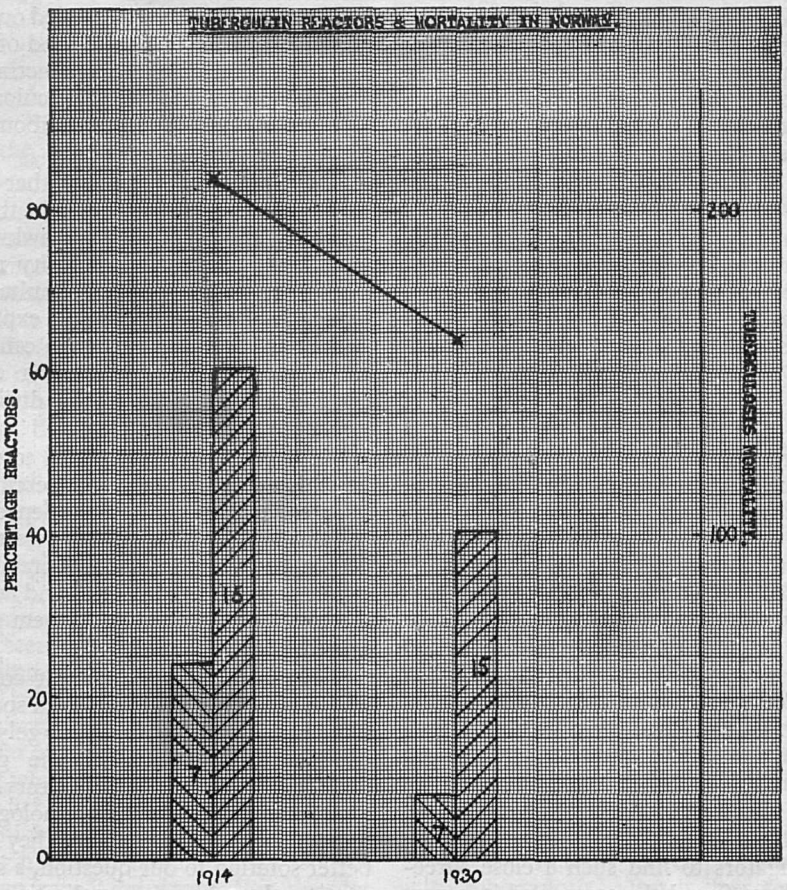

Fig. 2

Research Council has made in recent years in Reading, Cardiff, and one or two other towns. However, in spite of these statistical deficiencies, our progress is not altogether barred, for we can, quite fairly, do something to separate out some of the factors in poverty, the bad housing and the undernourishment, by approaching the problem from a rather different angle.

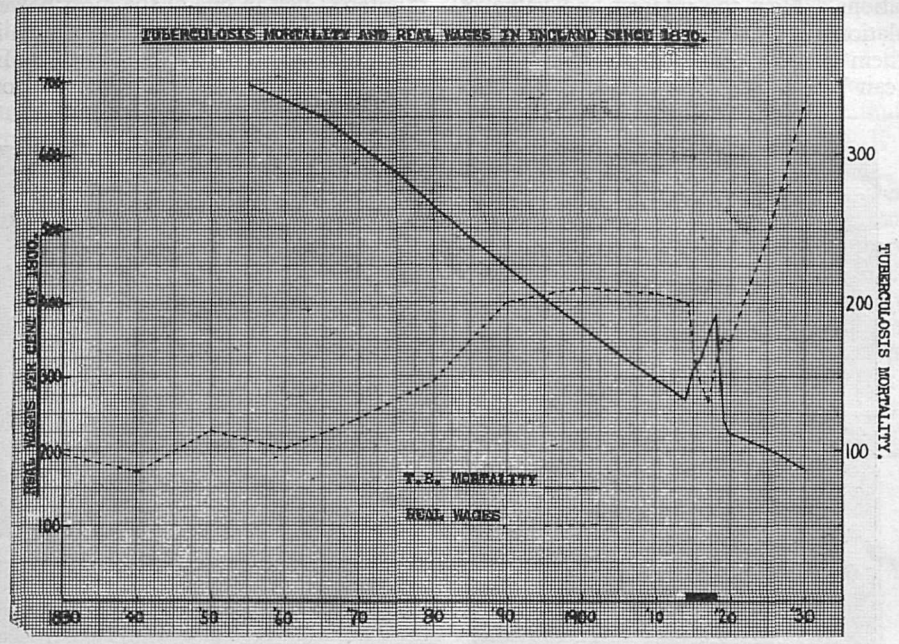

Fig. 3

Suppose that we provisionally accept the conclusion that reduction in poverty and decline in phthisis mortality go hand in hand, then we should expect that accompanying the very varying degrees of prosperity and depression in the different towns in the South, Midlands and North of England at the present time, we should find inversely varying rates of mortality from Phthisis.* The latter, the phthisis mortality, can be easily obtained for all the County Boroughs separately, from the annual reports of the Registrar-General; the former, the extent of serious poverty in the same boroughs, can only be estimated indirectly. Various methods for comparing the relative wealth and poverty of different places have been proposed and used. A rather ingenious one which is sometimes used is the proportion of families in the town employing domestic servants, an odd piece of information which is always published in the Census Reports. But the one I am going to use is more satisfactory and direct; it is the proportion of the population of the town that is in receipt of Poor Relief; the unfortunate people who have been out of work so long that they have passed from Unemployment Insurance pay, have exhausted their own savings and are now receiving weekly Poor Relief from the local authority. These people probably have as low a standard of living as any in the country, and I think we can quite justifiably grade our various boroughs as prosperous or depressed according to the low or high proportion of their inhabitants that is receiving public assistance. All the necessary figures are easily obtainable since they are published every quarter by the Ministry of Health, and if we chart them with the corresponding phthisis mortalities we find a curve as shown in Fig. 4.

How significant is the result? In some charts of this kind the points lie so closely in line that their significance is at once obvious. In others, such as this one, where the points are more diffusely scattered, it becomes necessary to calculate by quite straightforward, though often rather laborious, methods what is termed the " coefficient of correlation " for the two variables concerned—in this particular instance, Phthisis Mortality and Poverty. From the actual numerical value of this coefficient we can find out from the published

*These observations on the connection between Phthisis Mortality and certain social conditions form part of a study at present being carried out in conjunction with Dr. P. D'Arcy Hart.

books of statistical tables what is the *probability* that one variable, Phthisis Mortality, is related to the other variable, Poverty. Let us be quite clear on this point, for it is the basis of all statistical work of this kind; we are calculating a probability. When we apply statistics to a question of this kind, it can only answer us in terms of probability; there can be no absolute certainty unless we have included every possible case within the ambit of our calculations. Now the interest and value of such calculations as these is a very practical one. We want them to provide us with a probability on which we can base a sound prediction as to what

methods, and they tell us that 50 to 1 may be accepted as a very significant grade of probability, and that 100 to 1 may be regarded as making it virtually certain that two variables, such as our phthisis mortality and poverty, are actually inter-related. I have made this brief excursion into the methods of statistics for two reasons, partly because they are necessary for following this part of my discussion, and partly because I should like to interest you in one of the most powerful instruments we have in medical research, an instrument, too, which has been largely forged by Englishmen, most of them in the University of London.

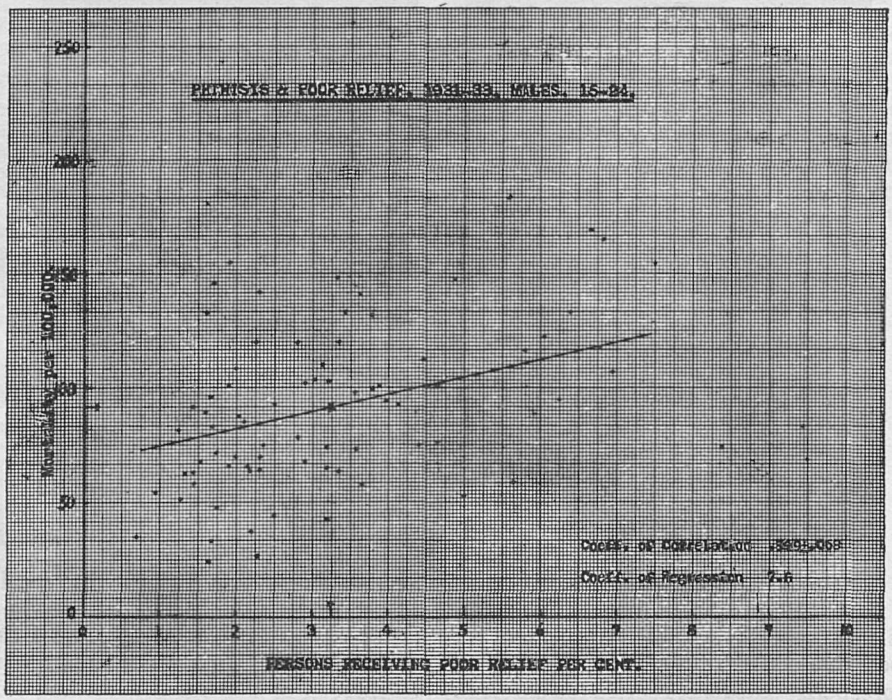

Fig. 4

is going to take place in the future, say in 1940 or 1950, so that we can make practical plans accordingly. Some entirely unexpected event may turn up in 1940 or 1950 and defeat our prophesy and upset our plans; we can nevertheless say here and now that from the total of our past experience, summarised in correlation coefficients of this kind, that the probability is so and so against that unfortunate event happening.

In actual practice what are we going to take as our criterion of when credibility achieves probability, and probability in turn approaches certainty? Fortunately, statisticians have now had considerable practical experience with these

Let us now return to our immediate problem. The actual probability that phthisis mortality and poverty are related to one another in the chart I have just shown you is 1,400 to 1. Now we must be extremely cautious at this point not to jump too hastily to a conclusion. We have found that, statistically speaking, phthisis mortality and poverty are definitely related, and that is precisely as far as the statistical method will allow us to go. It cannot tell us whether phthisis mortality is dependent on poverty, or, as certain eminent English authorities have maintained, that poverty is a result of phthisis, for it is quite obvious that unemployment and low wages frequently result

from persistent chronic illness. We have, therefore, to decide for ourselves which is the horse and which is the cart; more technically speaking, which is the independent and which is the dependent variable. For reasons which I cannot go into now, I am quite convinced that increased phthisis is mostly the result and not the cause of poverty.

By examining the conditions in the English county boroughs for the last three years, we have now reached the definite conclusion (that was, if you recall, merely strongly suggested by the slide showing phthisis mortality and real wages in England during the last eighty years) that the mortality grows less as the material good things of this world become more. But by approaching the problem from this rather different angle we find ourselves now in a much more advantageous position to analyse the situation more closely.

Two factors in poverty are generally regarded as especially contributing to disease: bad housing and malnutrition. In 1931, almost for the first time, fairly complete information on overcrowding was given in the Census Reports, and these figures will allow us to sort out at least one of these factors. The information supplied was that usually accepted by Public Health authorities as indicative of the degree of overcrowding: the percentage of the inhabitants of the County Borough who were living two or more per room. Let us now examine a figure showing the relationship, if any, between phthisis mortality and overcrowding.

We have here a chart closely resembling the one we had before for phthisis mortality and Poor Relief, and we can work out in just the same way the coefficient of correlation and from it the probability that the mortality is related to the overcrowding. When we do so we find that this probability is actually millions to 1, again, as before, a statistical certainty.

But this close association between overcrowding and mortality does not in itself exclude the possibility that the other factor, malnutrition, may not, in addition, be contributing to the deaths from phthisis. Since, as I have already said, we have as yet no information on malnutrition comparable with that on housing, we have no direct means of finding out what effect it can be having on phthisis mortality. But though we

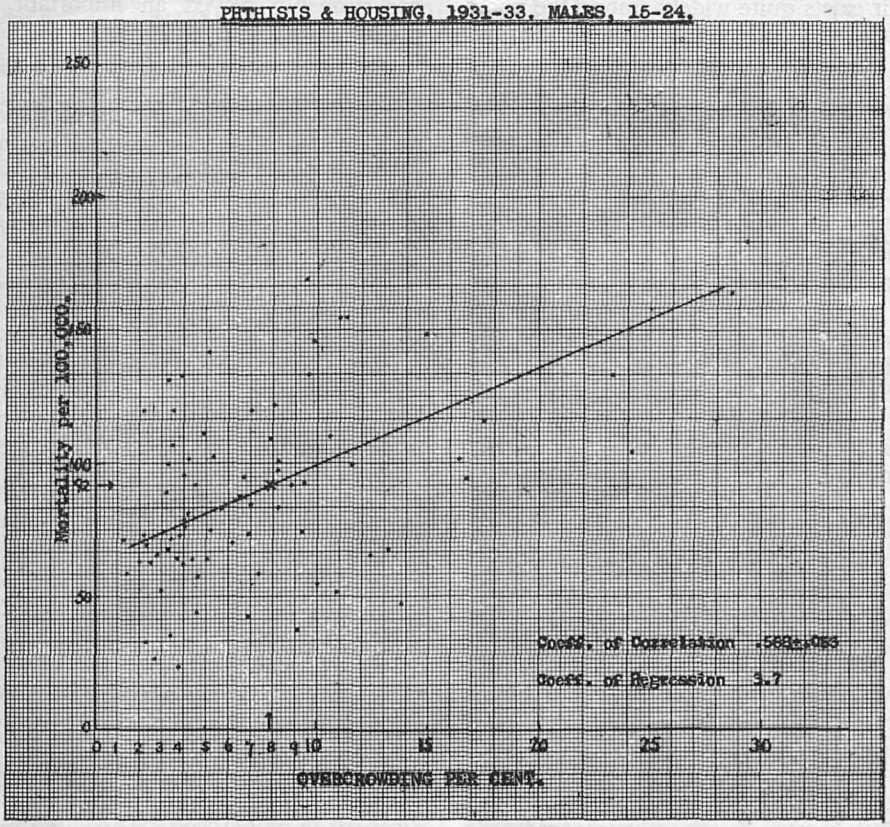

Fig. 5

cannot find it out directly, we can again call statistical methods to our assistance and obtain our result by indirect means. We can, so to speak, extract the particular effect of housing from the more general one of poverty and see whether any significant factor is left behind which would, of course, include malnutrition. The use of what are called "partial coefficients of correlation" allows us to disregard great variations in housing from place to place; it mathematically compensates for the fact that Brighton has about 4 per cent. overcrowding and Gateshead about 40 per cent. We can therefore set down in a three-line table the probable odds that phthisis mortality is affected by the three factors we have been considering: poverty in general, overcrowded housing, and malnutrition:—

Poverty in general	1,400 to 1
Overcrowding	millions to 1
Malnutrition	12 to 1

We have now reached an important conclusion which it will be well for us to consider briefly. It is quite clear from our analysis of the conditions in the English county boroughs at the present time that phthisis and overcrowding are going hand in hand, and that malnutrition, although we know that it exists quite widely among the poorer classes, is not sufficiently severe to be having much effect on phthisis. In brief, it means that whereas certain diseases like rickets and some of the anæmias are especially sensitive to malnutrition, tuberculosis resembles others in being more closely associated with overcrowding.

This analysis into separate factors has been carried out on the figures for the English county boroughs for the last three years, but our problem this evening is the cause of the decline in England for the last hundred years. Can we say that this has been mainly due to the progressive improvement in housing which has taken place since the first Housing Commission was appointed by Parliament in 1838? I am afraid the last link in my chain of argument is missing, and we can never get the statistical materials to construct it. We know quite well from the evidence given before that Commission that in those days the housing conditions of the poorer classes were appalling, but we have no idea of how the overcrowding would compare numerically with that at the present time. We can therefore only reach the conclusion, in answer to our second question, why has the mortality declined, that diminution in poverty has been mainly responsible, and of the elements of poverty, the decrease in overcrowding has probably played an important, if not the predominant, part.

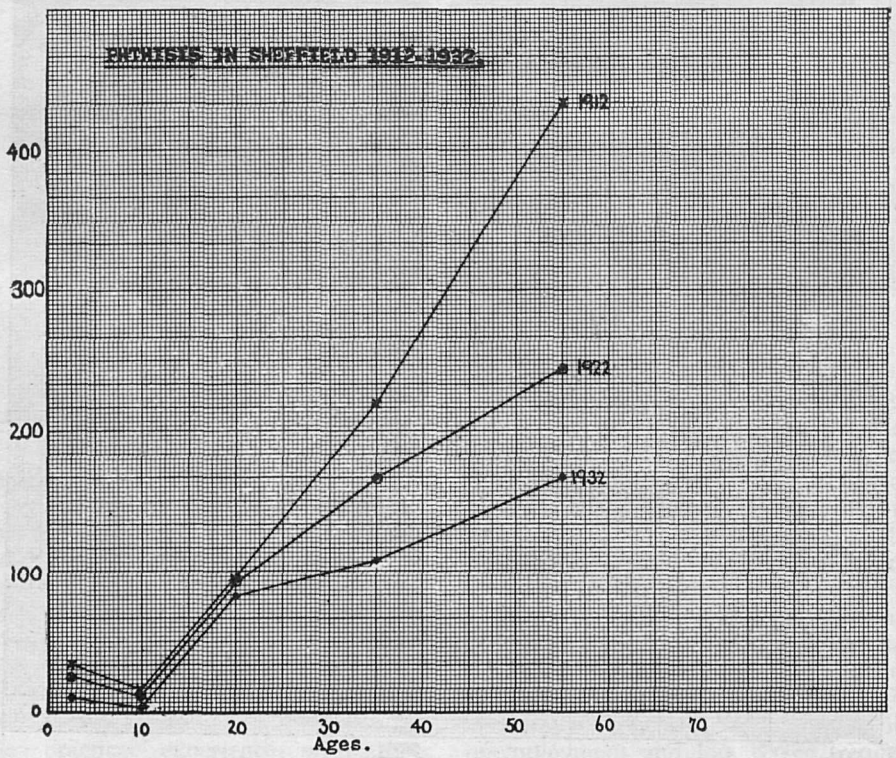

Fig. 6

We can deal quite briefly with our last question —what direction can we expect the mortality curve to take in future? Clearly, I feel convinced, we can expect it to continue downwards. Hitherto the decline in phthisis mortality has resulted from the gradual improvement in social conditions in general. Now we have come to realise that housing is the most important of them, and the new Housing Bill at present before Parliament deals specifically with overcrowding in a way that has never been attempted before. The effects of this Bill alone on phthisis mortality will, in the course of time, be most far-reaching. In addition, there are two other weapons in the war against tuberculosis that must also be considered: the institution by many local authorities of special tuberculosis services and the introduction of legislation on industrial diseases. The former, since it is of fairly recent origin, can have had little effect on the decline in the past, though it is clear that it will bear important fruit in the future. In Paris, for example, experience has shown that those arrondissements which have tuberculosis dispensaries have a noticeably more rapid decline in their phthisis mortality. Factory health legislation began earlier, and some of it may have had some effect on the latter part of our mortality curve. That certain occupations, such as tin mining, steel grinding, and boot and shoe making, have a sinister association with tuberculosis is now well known, and it is equally clear that some of the compulsory precautions taken have led to a great reduction in the hazard. Fig. 6 gives one of the most striking examples: the decline in the mortality from phthisis among males in the city of Sheffield, where cutlery grinding has long been one of the most important industries.

As European countries go, England certainly has low figures, but there is still plenty of improvement possible; our figures are still about twice those of the large cities of Australia. The continued decline, even in those places where it is now lowest, seems to show that, unless Europe experiences some disaster that puts back the clock by a century, there is nothing to prevent tuberculosis ultimately becoming as extinct as leprosy in this country.

Maldevelopment of the Jaws

A Paper read before the Guy's Hospital Dental Society on 22nd January, 1935, by R. O. Barber, Esq.

MR. PRESIDENT and GENTLEMEN,—In the short time at my disposal this evening I hope to be able to show the relationship between the theoretical knowledge which is accumulated during the studentship at this hospital and its practical application; too often is one apt to forget the theoretical for the practical. To-night, therefore, it will be my aim to correlate all those subjects which are so assiduously pursued, namely, Embryology, Anatomy and Physiology, and to show how these are most intimately connected with the study of Orthodontics, and how this latter subject can be, and is, an all-absorbing one, inasmuch as it allows one to apply the theoretical (which is the study of the normal and the abnormal development of the jaws which exist in these cases of maldevelopment) to the practical, which consists of righting the discrepancy.

It would be as well to define orthodontics: it is straightening of the teeth; that is not our only aim, we really promote growth of the jaws along their correct lines and aim at a pleasing result, not only to the orthodontist, but, more important, to the patient and parents. A better term, perhaps, would be "facial orthopædics," which embraces not only correct positioning of the teeth, but also growth of the jaws along the lines intended by Nature.

The word "malocclusion" is a term universally applied to all conditions of irregularities, not only in position of the teeth, but of lack of development of the jaws. To me it is an inexpressive term in many ways, literally meaning "bad shutting up," which I hope to show in this paper.

"Maldevelopment" is more applicable to these conditions of irregularly arranged teeth—crowded dental arches and subnormal or abnormal growth of the jaws. It may be defined as a stunting or overgrowth of an organ or part of an organ or organs irrespective of when the deformity occurs, but a sharp distinction is to be drawn between a congenital and acquired maldevelopment.

"Maldevelopments" may be transmitted from one generation to another; the purely hereditary factor is modified by intrauterine factors—it must also be pointed out that the new-born child has nine months of development behind it. As an example of hereditary influence two workers, Bagg and Little, in 1924, in attempting to illustrate the hereditary nature of some maldevelopments of the human body, submitted the ovaries of mice to doses of X-rays; such mice produced progeny amongst which many suffered from

clubfoot, polydactylism, etc. These deformed mice, although they themselves had not been submitted to X-rays, produced a high proportion of malformed young, showing that genital cells (germplasm) can hand on changes produced originally by artificial means.

There are, however, deformities which, although present in germplasm from the first, manifest themselves after birth. I would stress this point; one often sees cases of inferior retrusion, which do not become apparent until after the age of seven. On inquiring from the parents, one is informed that several members of the family have the same underdevelopment of the lower jaw. I think that, despite the views of some, the hereditary factor cannot, and must not, be ignored. I would go further and say that, in many cases, it must be carefully sought for. It has been shown by anthropologists that it is the admixture of races that has caused more irregularities both of the jaws and teeth than any other single cause—this factor can thus be attributed to heredity.

The embryology of the jaws and their development, the effect that growth and environment, external and internal influences have in their normal development, is our starting point.

ANTENATAL DEVELOPMENT

The mouth and face are formed from the following embryological structures, taking place at the beginning of the *fifth week* of intrauterine life, and is complete by the end of the *sixth week*. The fronto-nasal process, which is divided by the olfactory plates into one median and two lateral nasal processes, the rounded distal ends of the median nasal process are named the "globular processes." This fronto-nasal process is a product of the cranium covering the forebrain and forms the septal cartilage (median nasal), the premaxillary bone and philtrum (globular), the sides and alæ of the nose (lateral nasal), together with the vomer and vertical plate of the ethmoid bone.

The rest of the jaws and their appendages are formed from the first visceral (or mandibular) process. This gives off two processes, one on each side: the maxillary processes, which form the maxillary bones, cheek and lateral portions of the upper lip, whilst the mandibular process forms the lower jaw, lip and lower part of the cheek.

The division of the stomodæum, or primitive, mouth, into oral and nasal cavities is affected by the median nasal process sending a prolongation downwards to form the septal cartilage, and another inwards to form the palatal portion of the premaxillary bone. The maxillary processes each send a horizontal palatal process inwards to meet it; these palatal processes grow in at the *sixth week*, fuse at the *tenth week*, the fusion spreading backwards from the premaxillary region, the two palatal processes fusing last.

I would here draw attention to the fact that the premaxillary bone has a separate origin from that of the maxillæ, hence its rate of growth is not necessarily in accord with that of the maxillæ; also that the vertical process of the median nasal process is present in the mouth as the *frænum labii superiores*; an abnormal development of this, if persisting, may cause undue separation of the upper central incisor teeth.

The growth of the jaws from then onwards is a race between the maxillæ and mandible.

Eighth week.—Recession of the jaws is well marked.

Ninth-tenth week.—Mandibular development is pronounced; definite prognathic appearance.

Fourth month.—Mandibular growth retarded; micrognathic appearance.

Fifth month onwards.—The mandible and its lip grow quicker than the maxillæ and upper lip.

If there is an arrest in the rate of development at any of the above stages, we may get definite maldevelopment of the jaws; an underdevelopment or overdevelopment of either or both jaws. At birth the mandible is in distal relationship to the maxillæ; it is not until the fifth month after birth that normal relationship, as far as size is concerned, is reached.

The tongue, it must be noted, develops *pari passu* with the development of the jaws. The size of the tongue, whether it be due to fibrous hyperplasia or muscular strength, is one of the dominating factors in determining the width of the dental arches—especially the lower arch, which guides the upper to a certain extent. In cretins, for example, the child is small in stature, but the tongue is large and the dental arches are not markedly irregular. On the other hand, in congenital absence of the tongue the lower arch is half its normal size and both jaws are narrowed as determined by facial measurements, so that the tongue pressure, as well as tongue sucking, to which I will refer later, can and does cause maldevelopment. Abnormal pressure of the tongue will cause spacing of the teeth.

Deficiencies in the amnion and amniotic fluid may cause maldevelopment by undue pressure on the branchial arches, interfering with the blood supply, both the palate and mandible being affected.

MATERNAL INFLUENCES

During intrauterine growth a change in the developmental rate due to abnormal temperature, improper food supply and inadequate supply of

oxygen may, through the placental circulation, prevent morphological and functional perfection. In certain stages clefts appear in the upper lip, which are normal; should some disturbing factor interfere at this critical period and change the developmental rate, these clefts may fail to close and result in maldevelopment.

I have shown that these rates of development of the jaws vary; so may the growth of one or both jaws be affected at various stages, with resultant departures from the normal, and as the child develops the discrepancy becomes greater—the point to be noticed in this is that the orthodontist would be treating the end result and not the primary cause.

POSTNATAL INFLUENCES

Effects of Feeding.—Breast feeding plays a large part in normal development of the jaws; when an infant feeds at the breast it takes not only the nipple, but also a considerable portion of the areola into the mouth, with the tongue protruding over the lower lip. The mandible is first depressed and then raised, so that the breast is squeezed against the palate, milk is expelled, swallowed, and the process repeated. If the lower gum-pad does not approximate to the upper the mandible is thrust forward. This beneficial relationship is not so satisfactorily provided in bottle-feeding, the milk being delivered too easily. The milk is sucked out of the bottle rather than squeezed out; this causes lateral compression of the maxillæ with anterior prolongation, the cheek muscles being brought into play and not the masticatory muscles, as in breast-feeding.

The constitution of cow's milk is not all that can be required; endocrine secretions, normally provided for the use of the infant by the mother before the infant's own internal secretory apparatus has begun to function, are lacking. So that if, as is often the case, defective development of the jaws can be associated with endocrine deficiency or derangement, these may have their origin in lack of mother's milk in infancy, the initial impetus to the internal secretory apparatus being at fault.

In these so-called civilised times it is fashionable to deprive the infant of the heat derived from lying close to its mother, and the chief influence which interferes with suckling is cold, so the child often fails to make the initial demand and the milk fails—*i.e.*, if there is no demand by the infant, milk soon becomes unavailable; if there is a demand, milk is available, providing the mammary glands are developed properly, this depending upon the maternal hormones.

Many mothers, believing that breast-feeding overdevelops the mammæ with resultant marring of the physical figure—it does undoubtedly do so if proper safeguards are not adopted, but with the help of suitable exercises of the Pectoralis Major the breasts can be kept within their physical limits. Both breasts should be emptied at regular intervals by the infant and weaning take place gradually after the second month. Duty of the mother lies first in the child.

The infant's natural desires are suppressed from the first; as the child grows older the desire to seize anything and everything in its hands and promptly begin to gnaw is natural, but the mother interferes, preventing the child eating crusts—they may choke the child. The leather strap in its pram is next gnawed, but too quickly is put out of the way—it may harbour germs; and so we have the picture of a child trying to amuse itself, thwarted at every turn. Eventually the child discovers a most excellent substitute—its own thumb or fingers, and at last is perfectly happy, or the parents, wishing to give it an artificial substitute, provide a dummy. These all have their effects, as I will show in subsequent remarks.

HORMONE CONTROL

Hormones act as accelerators or inhibitors; they may work together or antagonise. They control development, growth, metabolic rate and the metamorphosis from the infant to the adult form.

The pituitary and thyroid secretions interest us most, though the thymus does undoubtedly influence the developing infant. The secretions of the anterior part of the pituitary, derived from the ectoderm of the primitive mouth, controls skeletal growth; over-secretion causes gigantism or acromegaly in the child and adult respectively, characterised, among other manifestations, by interstitial growth of the jaws with spacing of the teeth.

So that what is regarded as a purely local condition (*e.g.*, overdeveloped arches) may really be the result of excessive growth due to the malfunction of these regulators. When this condition is suspected, the conclusive test is a thorough medical examination, or else an embarrassing situation may develop in attempting orthodontic treatment without first putting these regulators in order.

I have given an example of pituitary excess; let me now give an example of thyroid—the so-called sub-thyroid—type, the individual being tall, dark and lanky. This condition is called the sub-thyroid type because the character of the thyroxin secreted is subnormal, being short of its usual standard.

The primary teeth are late in erupting, incompletely formed, poorly calcified, very prone to caries, with probable early loss of these teeth; this latter results in a mechanically deficient jaw development with malocclusion, a definite post-natal effect, though one which may have had its origin in utero (*cf.* maternal hormones and breast-feeding).

The teeth play a not unimportant part in mal-development; hormones may influence not only the size of the jaws but the size of the teeth. It is lack of correlation between the growth of the jaws and size of the teeth that gives rise to 90 per cent. of the irregularities due to crowding; when teeth are large there is a greater likelihood of irregularities than when the teeth are small, together with defective growth or insufficient growth of the jaws, hormones producing large teeth are hereditary. The formation of the teeth takes place in the *sixth week* of intrauterine life by the appearance of the tooth-band; at the *fifth month* calcification has started in the crypts of the milk teeth; at *birth* all the crypts, except those of the second and third molars, appearing at the fourth month and year respectively, are present.

I should here like to make a suggestion that the two dentitions should be referred to as Primary and Secondary. The primary comprises the twenty milk teeth and twelve permanent molar teeth, which latter are formed from the prolongation backwards of the tooth-band of the milk teeth. The secondary consists of only those teeth which replace, namely, incisors, canines and premolars, these being formed from offshoots of the tooth-band to the lingual side of the predecessor's germs.

At two years all the milk teeth should be present; at five years they should be spaced. If there is no spacing, then the first molars assume a forward position to normal, with consequent crowding; when the second molars erupt the crowding is made worse.

It is not until four and a half years after the eruption of the last milk tooth that the first permanent molar appears, to be followed at sporadic intervals by the other teeth over a period of seven years (the third molar being inconstant in its date of eruption). It is suggested by Elliot and Howell that the development of the higher centres in *homo sapiens* from the ages of two to seven years prevents the eruption of the teeth; after seven years and for the next ten years man is occupied in putting the cerebral part to its biologic uses essential for human existence, and is sluggish in dental affairs, lack of room preventing the earlier eruption of the teeth. It is worth noting that in the apes the teeth slowly follow one another, not at intervals, all teeth being present at two years in apes in the same state as in man, and that the dental armamentarium is completed at the same time in both man and apes. Therefore it would appear that the development of the cerebral centres in man does definitely impede normal development of the jaws and teeth.

The maxillary alveolar arch reaches its maximum growth in width from lateral incisor to first permanent molar by the end of the eruption of the latter tooth; thereafter this area of the upper jaw does not contribute to the forward growth of the maxillæ, but is thrust forward by the developing posterior part. The movement of the molar teeth in the upper jaw is downwards and forwards, being influenced by the expansion of the antrum and the growth of the upper jaw. The lower teeth look forwards, then gradually assume their correct position as the rami lengthen, following the curve of the base of the coronoid process. This brief consideration of the movement of the teeth in the dental arches leads us on to the next point to be surveyed.

AGE CHANGES IN THE TEMPORO-MANDIBULAR JOINT

In a normal child, *æt.* 8, the jaws can be protruded without the molar teeth separating, but if the masticatory function is poor the height of the unabraided cusps of the milk molars prevents the mandible from attaining its final correct position. Over the age of twelve years the molars become separated in protruding the lower jaw, this being due to the condyle passing down the eminentia articularis; therefore, in these cases of under-development of the lower jaw the correct age to commence treatment is under the age of ten years, for at this period the eminentia articularis is unformed, not developing until the age of ten years, the greatest development being from ten to eleven years. If these young cases (under ten) be treated by keeping them in the forward position, a very short period of retention is required—at the most six months. Over ten and a half years, which, unfortunately, is the age at which these cases present themselves at the hospital, it is a different picture. The jaw may be held in its new position, but retention is necessary up to periods of twelve years. As pointed out by one of our surgeons, these cases always relapse consequent upon the extraction of teeth, but the cases treated before the age of ten will not relapse, as I hope to show.

The inference is that the eminentia articularis develops anterior to the condyle in these cases, *i.e.*, in advance of its natural position, but when the eminentia articularis is already developed the change has to take place in the neck of the condyle, and, further, the condyle is kept half-way down

a slope, easily returning to its natural position when strain is released.

Having considered the developmental and hormonal causes of maldevelopment, there are other ætiological causes to be reviewed.

PARALYSIS OF NERVES

Paralysis of nerves results in maldevelopment, but it is to be noted that the teeth and jaws on the paralysed side are fairly regular and normally developed, this being due to the gentle pressure of the tongue; whilst the teeth on the normal, or unaffected, side are irregularly spaced, crowded and underdeveloped. Birth injuries also have the same effect, and may cause severe maldevelopment not only in the plastic bone of the cranium, but also in the jaw bones. This may be due to the underdevelopment brought about by the paralysis of the facial nerve.

Above I have attempted to show how the normal rates of growth and development may be affected by antenatal, parturient and postnatal influences, due to divers causes. There are as yet other factors to be considered, namely, habits, such as thumb-sucking, Freud attributing this to a sensual instinct, the mucous membrane of the palate being a highly sensitive tissue; pencil-sucking; the so-called pillowing habit; retention of milk teeth; premature extraction of teeth; persistent *frænum labii*; faulty conservative restoration; supernumerary teeth; odontomes, and trauma, such as putting a bead into the nares.

SUMMARY OF PATHOGENESIS OF MALDEVELOPMENT

a. Internal or hereditary cause—deficiency in germ anlage.

b. External causes (maternal).

Antenatal.—

1. Defect in fertilisation.
2. Inflammatory processes in utero.
3. Ill-health of mother.
4. Chemical influences (hormones).

Postnatal.—

1. Effect of feeding.
2. Thumb-sucking and allied vicious habits.
3. Chemical influences (hormones).
4. Development of cerebral parts.
5. Poor functional power.
6. Disease.
7. Injury to nerves, etc.

Parturient.—

1. Moulding of the face.
2. Trauma due to forceps.
3. Other injuries.

We have now to consider orthodontics and what it comprises. I have shown briefly that the knowledge of the mode of formation and development of the jaws is important; the point that now arises is—what is the rationale of treatment? It is to obtain the normal relationship of the jaws and teeth with each other and the facial ensemble. What is implied by normal? It must be appreciated that the biologic normal is the individual peculiarity—for instance, a narrow arch is normal to a person with a narrow face, and likewise a broad arch to a person with a broad face; therefore one must not attempt to widen the arch in the former instance, nor to narrow the arch in the latter, or disastrous results will supervene.

What is the aim of treatment to be? It is to obtain the following:—

1. Maximum utility of the jaws and teeth.
2. Establishment of Nature's laws of self-cleansing.
3. Normal bone growth to the individual.
4. Normal facial lines to the individual.
5. Equilibrium of occlusal forces. Nature's retainers.

How are we to diagnose these maldevelopments? Surely the diagnosis is built up on the same premise as the diagnosis of other pathologic or maldevelopment processes in any part of the body, namely, the comprehension of both the embryologic and developing organism, the degree of perversion from normal, the causes responsible—are these causes still effective? If treatment is indicated, it is to be instituted with a definite goal in sight, namely, the attainment of the above requirements.

All aids to strengthen diagnosis must be employed:—

1. Thorough case-taking of oral and general conditions.
2. Careful mouth examination.
3. Accurate models and a careful study of same.
4. Full radiographic survey of the jaws.
5. Photographs of the face, both full and profile.
6. Medical examination, if deemed necessary.

In treating cases it is not only sufficient to see the deformity, such as is present, but to outline in the mind the form of treatment best suited to that particular case, and, most important of all, to visualise the conditions with regard to the dental arches and facial appearance when such treatment is finished.

Certain points relating to the development of the jaws in their lateral and forward dimensions have purposely been omitted, and such as I have briefly considered have been viewed only in the light of, firstly, the lines along which development normally takes place; secondly, how these normal developments may be affected by the various influences responsible for the abnormal. In the latter part of the paper I have attempted to show how the theoretical may best be applied to our particular field of study.

Nursing News

OBITUARY

MRS. ROSE HENLEY

WE regret to record the death of Mrs. Rose Henley, aged 74 years, in Evelyn Ward on Saturday, March 2nd, 1935, from complications after a fracture of the femur.

Mrs. Henley was a Guy's nurse who worked in the hospital some fifty years ago, when Miss Victoria Jones was Matron, and she remembered Dr. Peter Horrocks being on the Medical Staff. Had her memory during her illness been good enough to recall the events of those days, some interesting sidelights on nursing history might have been obtained.

THE following Nurses were successful in passing the Final State Examination in February last. Their names have been added to the general part of the State Register :—

J. Arthurton
P. Baker
M. E. Bromwich
M. J. Flanagan
D. J. Glenister
F. Maitland
D. Markwick
M. L. Rickets
E. B. Thorne
B. Wilson
H. E. Arnold
H. D. Chrimes
B. M. Crutchley
A. Haslett
M. E. Johnston
B. M. Newman
F. M. Payne
M. J. Roberts
J. Warren
M. Bryce
O. Malone
M. Clarke
D. Bray
J. M. M'Gilvray
T. Lyons

Affiliated Training with the Cancer Hospital, Fulham Road

E. Doherty
A. Edwards
E. Hennessy

Correspondence

The Guy's '89 Club

To the Editor of the GAZETTE

SIR,—The Guy's '89 Club are holding their 39th Dinner at the Trocadero Restaurant on Wednesday, 8th May, 1935, at 7.30 p.m. Dr. Bradney Instone will be in the Chair. Will all members please make a note of the date and help to make the Dinner a success.

Yours, etc.,

GERALD S. HOVENDEN,
Hon. Sec.

" Glebeholme,"
99, Church Road,
Barnes, S.W.19.

Blood Transfusion

To the Editor of the GAZETTE

SIR,—The notes on Blood Transfusion in the last number of the *Gazette* make thought-provoking and perhaps disturbing reading. Taking the various points of interest in the order in which they arise, the first is, of course, the astonishing number of transfusions given in the course of a year and the rapid rise since 1928. One is bound to wonder if there is not some danger of donors (Red Cross or otherwise) being regarded much in the same light as the inanimate weapons in our armamentarium. As some sort of yardstick the figures for the 280 beds in the Royal East Sussex and Buchanan Hospitals in this town make interesting comparison :—

1932	....	33 transfusions.
1933	....	36 ,,
1934	....	38 ,,

Allowing for the fact that Guy's has, say, treble this number of beds, the difference in the number thought necessary is instructive. Perhaps we may hear the experience of other provincial hospitals in this respect.

The second point is the Table of Analysis. I feel that it would be of great interest if another column was added setting out the results of these transfusions. What, for instance, was the percentage of recoveries amongst the aplastic anæmias?

I wonder, too, if the recipients are grateful, or if they take it for granted much as they accept their major operations—that is to say, as something due to them because they happen to be ill?

Mr. Oliver says, " It is a condition that every effort should be made to obtain the services of relatives or friends before having recourse to the Service," but how this condition can be enforced I fail to see. Only those who have tried to persuade a faint-hearted lot of relatives to allow themselves to be grouped know the time and energy necessary for the job. I remember once (as an H.P.) interviewing eleven such folk. Four refused outright, giving powerful excuses, such as " they were just getting over a cold " ; three said they would have been pleased at any other time, but they, too, were in a similar dangerous state of health ; two were the wrong group, and one was too fat to present any veins. The one remaining stalwart, a mere acquaintance by the irony of it,

gave his blood gladly enough. I recall also that the husband, having made his excuse, said, "Wouldn't one of the young students be glad to give his blood to save a poor woman's life?"

This was all very well, but a great deal of time was taken up in meeting these people, arguing with them, and finally grouping the willing ones with the inadequate sera and arrangements available in 1929. I think it is, perhaps, doubtful, therefore, if relatives and friends form as big a proportion of donors as they should do, and this may also explain the big demand for Group 4.

Beyond a doubt the giving of a transfusion to a complete stranger is a most altruistic act, especially when we consider that the layman does not regard a pint of blood in the same light-hearted way that we do, and, personally, I feel that Red Cross voluntary donors should not be called upon except in the following circumstances:—

1. Where the transfusion has a very good chance of saving a useful life, and not merely prolonging a doubtful one.

2. Where all able-bodied relatives have been grouped and found unsuitable; the refusal of relatives to act as donors ruling out the question of employing a Red Cross voluntary donor.

3. Where a real emergency exists and Clause 2 cannot therefore be enforced.

Yours, etc.,

Hastings. G. NESBITT WOOD.

Reviews

Betting and Gambling. By PETER GREEN, M.A. Published by the Student Christian Movement Press. *Price* 1*s*.

CANON GREEN wrote this book in 1924. The legal aspects of betting and gambling have altered since then, and Mr. Cecil Rose in this new edition has made several alterations in the text to bring it up to date, but has made a point of keeping as much as possible the same as in the original edition, so as not to trespass on the lucid writing of the original author.

Guy's Hospital Reports. Vol. 84, No. 4.

THE final number of Vol. 84 contains seven articles. The first is a continuation of the Studies on Tumour Formation, by Professor Nicholson, and is a detailed description and commentary on a so-called fœtiform teratoma belonging to the Royal College of Surgeons of England. The teratoma was first described by Shetlock in 1904 as a dermoid cyst of the ovary removed from a woman aged 33. Professor Nicholson uses the term "fœtiform" for this tumour, but at the same time decries the term as inaccurate. He points out that it is in no sense a rudimentary organism: "We cannot assume that a teratoma differs except in its greater complexity from other tumour malformations, that it has a biological 'significance' or 'meaning' not shared by them." Later he writes: "Every teratoma is a physiological reaction to normal flesh. We see nothing of that physiological 'sequence' of reactions which is ontogeny." He dismisses the two most popular theories as to the origin of these tumours, namely, the parthenogenetic theory and the blastomere theory.

Dr. Ryle has written on the visceral neuroses. He points our how easy it is to confuse these conditions with "organic" disease and how most of them find their origin in a previous but finally departed organic injury in the shape of inflammation or irritation. In dealing with the cardiac neurosis he stresses the difficulty of distinguishing between angina pectoris and the pain associated with the neurosis. As regards treatment, he advises an attempt to restore the physiological and psychological balance of the patient.

Dr. Hartfall has analysed 40 cases of anæmia following gastrectomy and gastro-enterostomy. His main conclusions are that the anæmia is usually of the hypochromic variety, that it is independent of the amount of stomach removed, that it is usually accompanied by gastro-intestinal symptoms, and that the dietetic treatment of these symptoms by reason of its deficiency often plays a part in the ætiology of the anæmia.

Dr. Rogerson describes two cases of encephalitis following whooping cough. He points out how pathologically this type of encephalitis differs from that of measles and vaccinia in the amount of atrophy of the cortical cells and the degree of hæmorrhage.

Dr. Poulton and Mr. T. W. Adams have analysed some of the early experiments comparing the figures of direct calorimetry with those obtained by calculation from either the oxygen consumption or the carbon dioxide output. They make out a strong case for calculating the energy output of the body from the carbon dioxide output rather than the oxygen consumption, which is the more usual custom.

Mr. Bowen has written a comprehensive essay on the ætiology of appendicitis and has analysed the features of 150 cases of acute appendicitis treated at Addenbrooke's Hospital during 1932.

The last article in this issue is a description of a case of Kummel's disease by Mr. Drummond. He describes the pathology of the condition and the treatment by means of bone-grafting.

Sport

Rugby

Guy's v. Bedford

AT Honor Oak Park on Saturday, March 16th, Guy's played their return fixture with Bedford, and were defeated by 5 placed goals and 2 tries (31 points) to nil.

Throughout the whole of the season Bedford have been one of the most consistent sides in the country, and on this occasion they gave a glimpse of their form when they proved themselves vastly superior to the Hospital in all departments of the game, and fully deserved their success.

It was a pity that we were unable to field a more representative side, but, owing to injuries and with Dick playing in the International, their back division was so depleted that Hale-Monro and Fletcher were taken from the pack to complete the three-quarter line.

The Hospital were further handicapped when, after ten minutes' play, P. K. Hopkins, their hooker, was hurt and took no further part in the game.

However, considering that they were up against one of the best packs in the provinces, the remainder of the forwards put up a splendid fight, but they had not the pace or weight of Bedford. In the loose the visitors were supreme, and some of their forward rushes were a feature of the game.

W. A. Sime (their captain) and D. Coleman, the visiting halves, had a wonderful understanding, and although K. A. Stanyon-Jaques did many good things, he found it extremely difficult to hold Sime, who proved most elusive.

Bedford took command of the game from the start, but Guy's kept them out for nearly 20 minutes, when Haynes touched down from a rush following a line-out, and Eidsforth added the goal points.

Two minutes later Milman went over from another rush and before half-time Coleman, taking a pass from a scrummage, broke through on his own and scored the third try, both of which Eidsforth converted.

After the interval Guy's had to defend early on, and after their line had had two narrow escapes, Sime slipped away from a scrummage and sent in Wiltshire for a try, which Eidsforth again converted.

So far little had been seen of the Bedford three-quarters, and the fact that all the tries so far had been registered by the forwards suggested that they were not prepared to trust to their backs.

Towards the end they flung the ball about a little more and, following a dribble by Jackson, Haynes threw out a long pass to May, who just crossed in the corner.

In the last minute Lytle picked up in the loose and, after shaking off one or two opponents, scored far out, but Eidsforth failed to convert.

Team.—O. P. Llewellyn; H. J. B. Atkins, G. F. Rees, T. A. Hale-Monro, P. Fletcher; C. G. Wright, K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, P. H. Crampton, E. R. Davies, R. W. Coats, W. F. Frazer, H. C. French, R. O. Yerbury.

Hospital Information, etc.

Pass List

CONJOINT BOARD.

D.L.O.

December, 1934.

V. V. H. Hoakai.

D.O.M.S.

February, 1935.

V. V. H. Hoakai.

Papers by Guy's Men

A. G. Signy and D. Nabarro. Treatment of vulvo-vaginitis with œstrin. *Lancet*, 1935, i, 604.

Sir Frederick Gowland Hopkins. The study of human nutrition: The outlook to-day. *Brit. Med. Jour.*, 1935, i, 571.

L. Forman. (1) Lichen planus, (2) Kaposi's disease, (3) Pringle type of sebaceous adenoma. *Proc. Roy. Soc. Med.*, 1935, xxviii, 513, Sect. Dermat.

C. Worster Drought. Thyrotoxicosis with unilateral exophthalmos, hyperpituitarism and infantile hemiplegia. *Ibid.*, 513, Sect. Neurology.

Maurice Sorsby. ? Acoustic tumour, ? Ménière's syndrome, Case for diagnosis. *Ibid.*, 545, Sect. Otology. —— Temporo-sphenoidal abscess, drainage, recovery. *Ibid.*, 546, Sect. Otology.

C. S. Hallpike and A. F. Rawdon Smith. The origin of the Wever and Bray phenomenon. *Jour. Phys.*, 1934-5, lxxxviii, 243.

Change of Address

L. Elwin James, 28, Green Lane, Thornton Heath, Surrey. *Pollards* 4029.

Births

HOLMAN.—On March 2nd, 1935, at Finchley Road, N.W., the wife of T. Geoffrey Holman, M.R.C.S. Eng. —a daughter.

LANE.—On March 24th, 1935, at Wellesley House, Walmer, to Gladys, wife of Sydney C. H. Lane, M.B., of Deal—a son.

EDS. { D. P. K. / P. W. C.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX 13*th April* 1935 *Number* 1219

PASSIM

LAST week we were very disturbed to hear that it has been found necessary to close Patience and Samaritan Wards and, furthermore, that the reason for this exceptional step is the prevalence of sickness amongst the nurses. We have been told, unauthoritatively, that it is the rule rather than the exception for nurses to have to make good as much as six months of their training on account of illness, and there is quite a large proportion of girls who never complete the course for the same reason. It seems unfortunate that when physical endurance plays so small a part in the qualities of a " good nurse " it should play so big a part in the period of training for the profession. When we pause to consider the fact that nurses have to spend the best part of the hours of the day on their feet in the wards and then have to attend a lecture on two evenings in the week we can but admire their spirit and express our amazement that there is so long a waiting list of girls (as there is reputed to be) wishing to undergo the rigours of the training, although so many other careers are open to them.

The lectures at the end of a hard day would seem to us very tedious, but there are many nurses, we are told, who actually regard them as the most attractive part of their training. We have a suspicion that the lectures themselves are taken down word for word from the lecturer, and their interest lies not so much in themselves as in the reading of the notes during the few hours of leisure that are available.

The point we wish to make is that we feel that such a degree of sickness, in the absence of a prevailing epidemic, arouses considerable misgivings in our minds, and we are tempted to ask ourselves whether we can safely recommend the nursing profession as a career with all that enthusiasm which it deserves.

The closing of Patience and Samaritan Wards will cause much inconvenience and disappointment to the A.H.S.'s and R.O.'s, but at the same time the closure of any other wards would have caused an even more widespread inconvenience.

WE should like to call attention to the excellent work which is being done on behalf of the Hospital by the Guild of Ex-Patients. The Guild now has a membership of some two thousand five hundred, with a subscription of 2*s.* 6*d.* a year. During its two years' existence the funds have been devoted particularly to the provision of extra comforts and facilities for the patients in the wards. Their gifts have included twenty comfortable wicker chairs and forty draught boards, and they have attended to the reconditioning of the couches.

At the second annual meeting on March 20th, held in the Court Room, Sir Louis Greig presided. A donation of twenty-five guineas was made to the Hospital and a substantial balance was carried forward, which, with subscriptions, should enable the work to be continued.

THE Debating Society, with its customary enterprise, recently invited two members of the British Osteopathic Institute to propose in a debate that " the Principles and Practice of Osteopathy should be included in the Medical Curriculum." So topical a subject attracted a large audience, who, with the speakers, were less concerned with the actual motion than with the nature of osteopathy and with the claims of its followers to be able to cure all manner of diseases.

Mr. Atkins, in his opening remarks, made a point we feel to be particularly appropriate before a medical audience. The attitude so often adopted by medical men that charlatanism is peculiar to the followers of osteopathy and like cults, must be very irritating to the lay public, many of whom can claim with some justification to having been the financial victims of a medical ramp.

While so many of the most effective therapeutic measures in medicine remain on a purely empirical basis, it is difficult to refute entirely claims of the osteopaths for the inclusion of their subject in the medical curriculum. The greatest advances in medicine of recent years, however, have rested on such firm scientific grounds that any reversion to empirical principles, as would necessarily occur if recognition were given to osteopathy, would be disastrously retrograde.

THE Nurses are giving an entertainment in the Physiology Theatre on April 29th, 30th, and May 1st at 8.15 p.m. We have not been informed of the nature of this show, but we are assured that both high and low brows have been catered for, so that there is no excuse for anybody who does not buy a ticket to see it. Tickets can be obtained from Miss Taylor or any other member of the Nursing Staff, and are priced at 2*s*. 6*d*. and 1*s*. 6*d*. The proceeds will be devoted to the Cosmo Bonsor Memorial Scholarship Fund, which, we add for the benefit of those who are ill-informed, is to provide for post-graduate education of a Guy's Nurse.

WE are sorry that we are unable to eulogise in the customary fashion on the beauties of Spring in the Park. We would have been strongly tempted to do so, if the weather of a few weeks ago had persisted. However, we are able to inform our readers in less pleasant spheres that the perennial grass seed under the trees appears to have taken root. The gardeners have given up the unequal struggle in their efforts to grow anything in the plot of earth outside Dorcas Ward and this was filled in with " old brick " during the winter. That was a very astute move and one which we feel will be followed in the adjoining plot, where a definitely losing battle is still being fought by the gardeners on one side and "Nature and the Deity " on the other.

WE publish in this number a second letter explaining the Peace Ballot from Dr. Poulton, and with it bring to a close correspondence on a subject which, from its political nature, is rather outside the usual sphere of the *Gazette*.

Dr. Poulton is concerned with " a question of fact." His first letter, contradicting our statement that government rather than private firms failed to fulfil their contracts, was based on a reference to Mr. Lloyd George's Memoirs. To substantiate our contention and refute the contradiction, we quoted the Memoirs, and we are now sorry to hear that Dr. Poulton has not his copy to hand.

While always giving credit to the organisers of the Ballot for the sincerity of their effort to further world peace, we have, for reasons we have enumerated elsewhere, never believed it could perform this or any other useful function.

EVERY Tuesday, from 1 till 2 o'clock, gramophone recitals are given in the Chapter House, St. Thomas's Street, under the auspices of the Musical Society. The programme consists of popular classical music, and it is the intention of the organisers to hold similar recitals on Thursdays as well, if possible. Programmes will be posted up in the Colonnade and other prominent places. This project is the result of an earnest desire by a number of students to spend their leisured lunch period in listening to good music. Admission is free, but, owing to the cost of the hall and instrument, programmes will be provided, for which a voluntary donation would be appreciated to cover expenses. In addition to students, a special welcome is extended to the Nursing Staff and Massage Department.

Suppression of Urine

A Clinical Lecture by A. Arnold Osman, Esq., D.S.C., F.R.C.P.

GENTLEMEN,—Complete or partial suppression of the urine is always a serious symptom which calls for prompt and often energetic treatment. It may be met with in the practice of almost any branch of medicine or surgery, and therefore it is important that we should know how to deal with it. It will help if we first clear our minds of the common misconception that suppression of the urine is always due to disease of, or disordered function of, the kidneys. This is not so. Anuria often occurs when renal function is quite normal. In such cases neither water nor other substances normally eliminated in the urine are presented to the kidneys for excretion

—they are held up in the tissues, and this is known as pre-renal deviation. The anuria is, in fact, then extra-renal in origin, and may occur in cases in which the kidneys are perfectly normal, or may be super-added in cases of renal disease in which the damage to the kidneys is partly responsible for the suppression. Thus, in the early stages of acute diffuse glomerular nephritis the oliguria and increase of blood urea, etc., may be entirely extra-renal in origin, partly extra-renal and partly renal, or, more rarely, due solely to disturbance of renal function. In order to understand this apparent paradox it is necessary to be quite clear as to what we mean by the expression " renal function."

Apart from such comparatively minor duties as the production of ammonia, hippuric acid, and certain enzymes, the kidney has only one function, and that is excretion. The important role played by the kidneys in maintaining the optimum reaction and osmotic equilibrium of the blood and tissues is achieved through this function of excretion. Excretion, so far as the kidneys are concerned, really means ability to concentrate, and nothing more. Concentration, therefore, is the main function of the kidneys, and all so-called tests of renal function ultimately measure the concentrating power of the kidneys. Owing to the enormous reserves possessed by the kidneys, they may, of course, be considerably damaged before renal function becomes impaired, and, indeed, it is not until some three-quarters of the total renal substance is destroyed or rendered inactive that loss of function becomes evident. Were it not that in the majority of cases suppression results from both renal and extra-renal causes, it would be quite easy to differentiate between these two varieties of anuria. Cases of purely renal origin would bear the hall-mark of impaired renal function, namely, diminished power of concentration, whilst those of extra-renal origin would show evidence that the kidneys are able to concentrate to a normal degree. Thus, if any urine at all can be procured for examination it will be found to have a low specific gravity in the former variety and a high one in the latter. This simple test is all that is required to establish the diagnosis.

There is probably no exception to the rule that a low specific gravity, when only a small volume of urine is being excreted, means deficient renal function. Unfortunately, we possess no means of directly improving renal function once it has become impaired (except by the removal of an obstruction in appropriate cases where this is causing back-pressure in the renal tract), though, of course, it is often possible to compensate for diminished concentrating power by limiting in a suitable manner the quantity of substances ingested and particularly by increasing the urinary volume so that the total quantity of metabolic products eliminated in a given time is normal despite their diminished concentration. From what has been said already, however, it is clear that the prognosis in these two varieties of suppression will be very different. In renal anuria the prognosis is usually hopeless, always grave, and temporary relief is the most that can be expected. In extra-renal suppression, provided it be overcome, the prognosis is entirely favourable. As we have already seen, however, in many cases both factors are present.

It is important that we should be conversant with the circumstances in which suppression of the urine is likely to develop as then it is often possible to prevent it. Foreknowledge is indeed our most potent preventive weapon. A previously damaged kidney, or an existing nephritis, will, of course, increase both the liability to suppression and its gravity. An attempt has been made in the following list to indicate the more important conditions disposing to suppression. It does not claim to be exhaustive, or even to provide a satisfactory classification of these conditions.

COMMON CAUSES OF SUPPRESSION OF URINE

A. Mainly extra-renal :—

a. Excessive loss of fluid from the body—
Diarrhœa. Cholera, summer diarrhœa of infants.
Vomiting. High intestinal obstruction.
Therapeutic. Tapping for dropsy.

b. Pre-renal deviation—
Early stages of some cases of acute glomerular nephritis, and acute nephrosis.

B. Generally both renal and extra-renal :—
Acute exacerbations of chronic nephritis.
Disturbance of " compensation " in chronic nephritis by—

a. Acute infections.
b. Bilious attacks (=vomiting).
c. Menstruation.
d. Pregnancy (=labour).
e. Over-exertion.
f. Operations and general anæsthetics.
g. Administration of heavy metals—lead, mercury (salyrgan, neptal), bismuth, gold (sanocrysin), arsenic (salvarsan, N.A.B.).
h. Administration of pituitary extracts.
i. Administration of serums and blood transfusions.

Blackwater fever.

C. Mainly renal :—

a. Bilateral thrombosis of renal vessels, or extension of malignant growth into renal veins.

b. Acute poisoning with phosphorus and the heavy metals, especially $HgCl_2$.

c. After burns.

d. Early stages of some cases of acute glomerular nephritis (" angiospasm " of Volhard).

e. Terminal chronic nephritis.

f. Bilateral cortical necrosis.

D. Unclassified :—

Heart failure.

After catheterisation.

Some of these conditions require further comment. For example, it is generally supposed that the chief danger from the mechanical withdrawal of fluid by means of acupuncture, Southey's tubes, or paracentesis abdominis, in cases of nephritis with dropsy, is infection at, and spreading from, the site of the operation. I believe that with ordinary precautions this risk is not very great, and I have only once seen a fatal result from this cause. Far more serious, because it happens more frequently, is the extreme oliguria, and even anuria, which sometimes follows this procedure, so that an extra-renal uræmia is added to any which may be present already, and even in cases with normal renal function a fatal issue may result. In several cases of pure nephrosis, for example, following this method of treatment, I have seen a previously normal blood urea gradually rise with increasing lethargy, coma, and finally death. In most instances it is this added factor of extra-renal suppression and uræmia which is the chief danger in connection with the conditions mentioned in the above list (B, *a* to *i*, inclusive). Comparatively few of them lead to sufficient further damage to the kidneys themselves to cause suppression, unless, indeed, they become operative in a case in which renal function is already almost in abeyance. It is of the utmost importance to keep these facts in mind, for, by doing so, it is often possible to avert the danger of suppression.

Many cases of renal disease remain " compensated " for gradually increasing loss of renal tissue over periods of months and years by passing larger and larger volumes of urine. Polyuria of this kind is the chief method made use of by the body for dealing with impairment of renal function. Owing to the large volume of urine excreted the total quantity of waste products eliminated may be sufficient to prevent accumulation in the blood —the blood urea, for example, does not rise— until eventually a stage is reached in which so much renal tissue is destroyed, and the concentrating power of the kidneys is so much impaired, that the output of extractives falls below requirements and accumulation occurs in the blood. The case then becomes one of decompensated impairment of renal function, renal insufficiency, or uræmia. It is in this stage that the body sometimes makes attempts to relieve the situation by getting rid of waste products through such extra-renal channels as the stomach, colon, and even the skin. Finally, the kidneys become incapable of " concentrating " even water, the volume falls, and anuria ensues. This is true renal suppression, the final and natural result of increasing destruction of renal tissue. In practice it is very rarely seen, because death usually occurs from intercurrent accidents before this stage is reached. It is usual to ascribe death to intercurrent infections or to post-operative shock, and so forth, but the important point is that these extraneous conditions cause, or hasten, death, not generally because they produce further damage to the kidneys, but because they cause pre-renal deviation of water and extra-renal uræmia. In this manner a compensated case become decompensated, and a previously decompensated case has added to it a further load—the proverbial last straw. These remarks apply with particular force to the conditions enumerated above (B, *a* to *i*). It is for these reasons that surgical shock, general anæsthetics (especially chloroform), pre- and post-operative starvation (if it includes limitation of fluid intake), etc., are so dangerous in cases with damaged kidneys. All these conditions induce pre-renal deviation and consequent oliguria. Here, too, lies the danger in renal cases of using pituitary extracts for post-operative ileus and distention. No reputable manufacturers, I am informed, will guarantee an extract of pituitary gland entirely free from the anti-diuretic principle.

The action of the heavy metals in causing suppression of urine is not entirely understood. In excessive doses, as in cases of suicide, they all cause renal necrosis. In therapeutic doses some of them at least (*i.e.*, Hg in salyrgan or neptal) are known to act partly on the kidneys and partly on the other tissues. For these reasons I have included them under two headings (B and C) in the list. The use of serum in sensitised individuals sometimes leads to pre-renal deviation with oliguria and even complete suppression of urine. Sometimes the kidneys also sustain direct injury, and albumen and perhaps blood appear in the urine. Such consequences are more likely when the kidneys are already damaged. Blood transfusions, especially when repeated within a short period (less than five to six weeks) are, also sometimes followed by suppression of urine, mainly of the extra-renal type, but associated with some

direct injury to the kidneys. It must be remembered in this connection that, however carefully performed, blood-grouping is a comparatively rough and ready procedure, and that in all probability exact compatibility is an unattainable ideal. Whether this be so or not a certain amount of hæmolysis always accompanies blood transfusion. It is known that the products of hæmolysis, particularly the stroma of the red blood cells, are highly nephrotoxic. Cases with previously damaged kidneys are peculiarly susceptible to further renal injury from these substances, and it is a wise rule never to give a blood transfusion in any case of renal disease except for the most urgent reasons, and then only after adopting every precaution. Suppression in blackwater fever is in many respects similar in its pathogenesis to that following the use of serums and blood transfusions, except that there is, in addition, an obstructive factor due to blockage of the renal tubules with the products of hæmolysis.

TREATMENT

Prevention is the most important aspect of treatment. For this reason I have discussed the pathogenesis of suppression in some detail. If we understand clearly the nature of the disturbances involved and the circumstances in which they are likely to develop we need not burden our memories with a list of disposing " causes." To prevent suppression it is important in all cases of renal disease to avoid as far as possible those conditions which are likely to lead to oliguria, whether resulting from pre-renal deviation or further injury to the kidneys, or to ensure that, if unavoidable, they become operative at the most favourable moment. For practical purposes this means that when possible therapeutic measures which are likely to cause oliguria should not be adopted unless a satisfactory volume of urine is being passed at the time. There is both clinical and experimental evidence that the exhibition of alkaline salts not only causes diuresis, but protects the kidneys to some extent against the influence of many noxious agents. For prophylaxis, therefore, it is desirable that the fluid intake should be adequate and that sufficient alkali should be given to render the urine definitely alkaline as described later. More than this we cannot, and less we must not, do.

In the treatment of the established condition we may pursue one of two courses. Roughly speaking, they constitute the old and the new methods of treatment. The former aimed at promoting elimination of waste products through all the available extra-renal channels of excretion, particularly the skin and bowels, by means of hot baths, diaphoretics and purges, whilst counter-irritation is applied to the kidneys in the form of dry cupping, hot local applications, and warm colonic douches. The latter, on the contrary, is concerned in ensuring that water and extractives are presented to the kidneys in a form suitable for excretion, and elimination through extra-renal channels is discouraged. My own experience with the older methods inclines me to the view that they do sometimes tip the scales in the right direction. They are, however, uncertain in their action, and valuable time may be lost in trying one remedy after another. If after 48, or, at most, 72 hours of complete anuria these methods have failed, I believe it is best to proceed at once to the alternative method as described below. Incidentally, before embarking on any method of treatment it is a wise precaution to mention to the relatives that in these cases sudden and unexpected death is by no means uncommon.

PROCEDURE FOR THE TREATMENT OF ANURIA

The essential points in the procedure are to give alkalies in increasing amounts rapidly until diuresis commences, then to reduce the dose sufficiently to maintain the flow, but not to the extent of permitting a diminution of the volume of urine passed. The patient requires unceasing attention and should on no account be left without expert supervision. Until the secretion of urine is obviously established, catheterisation should be carried out at four-hourly intervals as an indication of progress and a guide to treatment. A mixture containing 30 grains each of potassium citrate and sodium bicarbonate, with some suitable flavouring agent, such as syrup, aurantii, minims 40, in an ounce and a half of water, is given by mouth at hourly, or two-hourly, intervals until secretion begins and shows signs of increasing. In cases of coma a 3 per cent. solution of the same salts in equal parts is given slowly per rectum or intravenously until diuresis is established, or consciousness is regained, when oral administration is to be preferred. Not less than three pints of fluid (excluding medicine), and preferably more, should be given per 24 hours. Except in the early stages of some cases of acute glomerular nephritis, œdema is no contra-indication to the giving of extra fluids.

The number of doses and the total amount of alkali required to start diuresis of course varies in each case, but it is absolutely essential that alkali should be given continuously until secretion of urine begins. When the urinary output has reached 15 to 20 oz., *and is seen to be still increasing*, the alkalies must be reduced in amount, but must

not be omitted altogether. Usually the total quantity of alkali given in the 24 hours may be reduced by about one-third, but if this is followed by a decrease in urinary volume the former dose must be resumed immediately. It is generally more convenient to alter the number of doses given in the 24 hours rather than the quantity of alkali in each dose. By thus carefully manipulating the dosage it is usually possible to maintain a satisfactory diuresis. Of course, when renal function is almost completely deficient, even though by the method indicated a sufficient diuresis is procured, the urine passed will consist of little more than water, and a fatal issue is certain. We have then at least accomplished all that is possible under the circumstances. The danger of alkalosis from excessive dosage is negligible in cases of suppression, except when it is associated with either incessant vomiting, or marked and prolonged dyspnœa. In such cases a preliminary estimation of the alkali reserve of the blood should be made. If alkalosis be shown to be present treatment consists in giving normal saline by mouth, per rectum, or intravenously.

In conclusion, I would again remind you that suppression of urine often constitutes a grave medical emergency which calls for bold and energetic treatment.

The Physiology of Bone Metabolism

A Paper read at a Joint Meeting of the Guy's Hospital Physical and Physiological Societies on 31st January, 1935, by R. V. Coxon, Esq.

MR. CHAIRMAN and GENTLEMEN,—The bony skeleton has always claimed a prominent place in anatomical teaching and text-books, yet physiologists as a body have given so little attention to the matter that even in the best physiological text-books the question of bone metabolism is dismissed in a few vague sentences. For this reason, in venturing to present a paper on the subject, I feel rather in the position of the proverbial fool rushing in where angels fear to tread.

However, mainly as a result of the fact that bone metabolism has been found to be very closely bound up with two special branches of medical science which have during recent years been very much in favour with research workers, viz., biochemistry and endocrinology, a wealth of information has come to light which has a very definite, though as yet not very clearly defined, bearing on the subject of bone metabolism. The problems of bone metabolism fall conveniently under three main heads: first, there is the question of the absorption of raw materials, including the action of vitamin D; secondly, that of the relation of bone metabolism to the general metabolism of the body; and, lastly, there is the physiology of the local occurrences in the bone itself.

Taking the first of these headings—that is, the absorption of the raw materials—it is well known that bone contains, apart from the usual protoplasmic constituents, large quantities of calcium and phosphorus in inorganic form, so that, for the formation of bone, adequate supplies of these elements must be available. In this country the principal sources of calcium in the diet are milk (and its derivatives—cheese and butter), eggs, green vegetables and nuts. It seems probable that in whatsoever complex combination the calcium may enter the gut, before it can be absorbed it must be reduced to the form of an inorganic salt, partially or completely ionisable; it is curious, though, that under experimental conditions calcium salts, whether soluble or insoluble, are absorbed only with difficulty. It is desirable that calcium should be present in the diet in excess, since some of it always tends to combine with various radicles met with in the digestive juices, especially the carbonate radicle, and so be precipitated and excreted without further ado in the fæces. It has been found that sugars, and in particular lactose (which occurs, of course, in company with calcium in milk), tend to aid calcium absorption, but excess of phosphorus on the other hand may materially hinder such absorption, since it causes the precipitation of tertiary calcium phosphate ($Ca_3(PO_4)_2$), which is highly insoluble.

This relationship between calcium and phosphorus is peculiarly interesting when considered side by side with the close relationship which exists between the same two elements in bone. In former times great emphasis was laid upon the so-called calcium-phosphorus ratio of the diet, but of late the importance of this ratio has been seriously called in question, principally by reason of the work of May Mellanby,[1] and it now seems fairly certain that for practical purposes the all-important factor governing the absorption of calcium and phosphorus in the needful quantities is the antirachitic substance, vitamin D. Vitamin D, like the growth-promoting factor vitamin A, is a fat-soluble substance, and, chemically speaking,

its most notable property is that it can be synthesised from ergosterol (a sterol similar to cholesterol, with the empirical formula $C_{27}H_{42}O$) by irradiation with ultra-violet light; a property which is also significant biologically, since it has transpired that vitamin D can be and is synthesised from its much more commonly occurring precursor by the animal skin with the aid of ultra-violet light. The discovery of this property explained immediately the clinical finding that sunlight, either natural or artificial, has a curative action on rickets. It has now been established almost beyond question that vitamin D is indispensable for the proper *absorption* of both calcium and phosphorus, although whether its primary effect is exercised on the calcium or the phosphorus, if either, is as yet unknown, as are also the details of the mechanism by which the effects are produced. It has been noticed that, in cases of rickets (a disease found in children and characterised by gross deformity of the skeleton) the intestinal contents react alkaline, whereas in normal individuals they are acid; and, moreover, administration of vitamin D, in curing the rickets, restores the acidity of the fæces. It is recorded that if bile be absent from the intestine, bone defects are liable to occur.

The chief sources of phosphorus in the diet are meat, containing nucleoprotein; milk, containing phosphoprotein; eggs, containing lecithin; and small quantities of phosphates among the salts of the food.

Milk, therefore, is a source of both calcium and phosphorus, and if obtained from a cow (or other animal) which has been either exposed to ultra-violet light, or given vitamin D in its diet, will also contain the necessary factor to enable its calcium and phosphorus to be utilised by the consumer—hence the value of milk in preventing rickets in children. As regards the absorption of phosphorus, the available information is, if anything, less helpful than in the case of calcium. Samson Wright sums the matter up as briefly, and probably as fairly, as possible, by remarking that "it is presumably absorbed as inorganic phosphates." There seems, however, little doubt that there is a close relationship between the absorption of phosphorus and the absorption of calcium, and that the proper absorption of both is dependent on the activity of vitamin D.

Having followed the entrance of calcium and phosphorus into the blood-stream, the next problem is to trace the factors which influence their subsequent destiny. One question which immediately arises is whether vitamin D, having superintended the absorption of the elements into the blood, has completed its tack, or whether it is capable of influencing their internal metabolism. The evidence on this point is chiefly derived from a study of the effects of excessive doses of the vitamin.

The symptoms of hypervitaminosis D are increased serum-calcium, accompanied by the appearance of calcareous deposits in certain parts of the body; increase of inorganic phosphorus in the blood; and also increased excretion of both phosphorus and calcium by the kidneys. It should, perhaps, be mentioned parenthetically that calcium is not excreted exclusively by the kidneys, quite a considerable proportion being eliminated via the lower gut into the fæces. There is some difference of opinion as to the origin of the additional calcium and phosphorus which appear in the blood and urine during hypervitaminosis D; some observers[2] maintain that they come from the bones; others[3] contend that the bones are unaffected, and incline to the belief that the increased excretion is simply a consequence of excessive absorption from the gut caused by over-activity of the vitamin. Actually the work of Harris and Innes[4] indicates that, although on a normal or calcium-rich diet hypervitaminosis D is not accompanied by resorption of bone, yet if irradiated ergosterol be administered in conjunction with a calcium-deficient diet, osteoporosis may result. The same workers suggest further that vitamin D, at any rate in excess, will promote osteogenesis (*i.e.*, bone formation). Ingenious theories that vitamin D stimulates parathyroid tissue[5] or increases the blood phosphate by hydrolysing the lipides of the tissues[6] have been advanced, but have not at the present stage attained much prominence, although future developments may, of course, bring them to the front. I ought to mention that some writers assert that many of the toxic symptoms associated with hypervitaminosis D are in reality due to impurities in the preparations of vitamin D employed in the experiments; this opinion is, however, nothing more than a conjecture, and is not generally accorded very serious consideration. The bulk of the evidence seems to indicate that vitamin D *can* exercise an effect on the course of calcium metabolism beyond affecting its absorption and excretion, although to what extent this effect enters into the normal train of events is not very clear.

At one time or other almost every ductless gland in the body has been credited with some influence on calcium metabolism, but the role of the parathyroids in this connection is now undisputed. I propose, therefore, to attempt some account of their working, because this is intimately related, as was the case with vitamin D, to bone metabolism

since, as Donald Hunter[7] has rightly emphasised, "the bony skeleton of the mammal is not only a supporting structure, but is also a reservoir of calcium and phosphorus. Even after full growth is complete, bone salts are being continuously removed and renewed, and they are not once and for all laid down and fixed." It is in connection with this "reservoir" function of bone that the parathyroid glands are concerned. They have to do with the maintenance of the blood-calcium level (*i.e.*, the concentration of calcium in the circulating blood), and the maintenance of this level at the appropriate value is of immense importance to the organism as a whole, because if it is too low, the result is a disturbance of the ionic equilibrium of the tissue fluids, leading to hyperexcitability of the tissues, especially of the motor nerves, and ultimately to the onset of the condition known as tetany.

Excessive parathormone in the circulation, whether introduced experimentally or by pathological over-activity of the parathyroid glands, gives rise to very grave disturbances in the condition of an animal. If an animal be given fairly copious injections of parathormone regularly over some period, the following gross symptoms are observed: anorexia, diarrhœa, vomiting, lassitude and atonia, culminating in coma and death. There is also calcification of various parts of the body, especially the renal cortex, the Kupffer cells of the liver, the arterial walls, and the interstitial tissue of the heart, but it is the changes in the blood chemistry which give the clue to the mode of action of the parathyroid hormone. Excess of this hormone in the blood appears in the first instance to give rise to an increased concentration of both calcium and phosphorus in the blood (both having been derived presumably from the bones). The end-result of this condition is, however, complicated by the response of the kidneys to the new state of affairs. At first there is increased excretion of calcium by the kidneys as calcium phosphate. This is accompanied by a much greater increase in the urinary phosphorus, which shortly produces a low serum-phosphorus content. Later, however, renal damage supervenes; the excretion of calcium by the kidney is reduced, so that the already high blood calcium rises still higher, while the blood phosphorus is also raised, due to defective phosphorus excretion. The extent of this renal damage varies considerably in different animals. It should be mentioned in passing that the bone disorder known as renal rickets, which affects humans, is believed to be due to some derangement of the kidneys, which are known to be unable in this disease to excrete phosphorus. The condition differs from ordinary infantile rickets in that it does not respond to treatment with vitamin D and/or high calcifying diets. There is, as a matter of fact, considerable evidence based on both clinical and experimental data, pointing to the assumption that the kidneys and parathyroids normally work in close co-operation.[8] Collip and Thomson[9] maintain that the more alarming effects on the general health of an animal which accompany hyperparathyroidism do not become apparent until the renal damage is so far advanced as to cause retention of phosphorus, and they consider that the occurrence of hypercalcæmia and hyperphosphatæmia simultaneously is really responsible for the grave symptoms described earlier.

Assuming Collip and Thomson to be correct in ascribing importance to hyperphosphatæmia, it occurred to me that possibly the retention of phosphorus mentioned as a feature of renal rickets may, by causing hyperphosphatæmia, establish a state of affairs similar to that obtaining in hyperparathyroidism, and so produce comparable symptoms.

In an experiment upon himself a certain Dr. Johnson—an American, I believe, and no relation to his more famous namesake—produced, by a series of injections of parathyroid extract, a condition in himself strongly resembling that previously reported in experimental animals, and noted, in addition, that severe pains were present in the bones and joints. This picture is an almost exact replica of that found in cases of von Recklinghausen's disease (*osteitis fibrosa generalista*), which is now recognised as being associated with hyperparathyroidism, generally attributable to a tumour of one of the glands. Having established that hyperparathyroidism results in liberation of calcium from the bones, it is necessary next to endeavour to elucidate the process by which this occurs. The most attractive theory is that calcium is actively liberated by the bone tissue; histological examination carried out *post mortem* in experimental animals suggests this, and it is generally accepted that in von Recklinghausen's disease, lacunar absorption of bone takes place by the agency of proliferating osteoclasts.[7]

With regard to the other ductless glands which have been alleged at various times to exert an effect on calcium metabolism, only the thyroid, and to a much lesser degree the thymus, have had their claims at all substantiated. It has been found that thyroid extract may raise the blood calcium level, but this effect is possibly explicable by supposing that it is due to the occurrence of accessory parathyroid tissue among the cells of the thyroid, and consequent contamination of the extract, although Kunde[10] claims to have produced

the effect with pure thyroxin. The question of the thymus and calcium metabolism is very nebulous, but probably not very important.

No account of the metabolism of bone could have any claim to being adequate if it did not include some reference to the mechanism by which the mineral constituents are deposited in the body fabric during ossification. Unfortunately, although much interesting work has been done on certain aspects of this question, it is impossible at the present juncture to tell the story in anything like completeness.

The generally accepted account of the histological changes occurring during ossification in cartilage divides the process into three stages. In the first stage, the cartilage cells hypertrophy and become arranged in concentric rows radiating from a centre which is the so-called centre of ossification; at the same time the cells of the deep layers of the perichrondrium (*i.e.*, the future periosteum) deposit against its deep surface fibrous tissue, the matrix of which becomes calcified while some of the cells remain embedded in it and become bone corpuscles. In the second stage, called the irruption stage, vascular processes from the deep part of the developing periosteum eat into the calcified cartilage, absorbing it freely before them, the absorption being carried out by giant cells known as osteoclasts. The consequence of this absorption is that large cavities or marrow spaces are left containing embryonic connective tissue intermingled with sundry osteoblasts and a large number of blood sinuses. In the third stage, there is deposition of primitive bone layers around the margins of the marrow spaces, but these layers are again absorbed, and finally fresh layers are laid down round Haversian canals, and thus the typical histological structure of bone is produced. Ossification in membrane follows essentially the same course as the periosteal component of the intrachondral process, the active elements receiving the name of osteogenic fibres.

Several theories have been advanced to explain the deposition of calcium salts in the matrix of ossifying tissue; the simplest of these postulates that the circulating blood functions as a supersaturated solution of calcium phosphate ($Ca_3(PO_4)_2$) and therefore tends to deposit the solid phase wherever conditions are favourable, that is to say, where it comes into contact with its own solid phase, as it would in ossifying tissue; it undergoes a process similar to the seeding of crystals in the chemical laboratory. This theory is not likely to be correct for several reasons; first, because it fails to explain the beginning of the process in embryonic tissue; secondly, because it takes no account of certain mechanisms which have been demonstrated; and, lastly, because it is highly improbable that blood does represent a supersaturated solution of calcium phosphate. The second theory is that of Freudenburg and Gyorgy, which assumes that calcium from the blood combines with the acid radicles of the proteins of the matrix to form a basic compound, which in turn combines with phosphoric acid groups in the blood, to form a new complex which spontaneously decomposes into the original matrix protein and calcium phosphate. The third and most attractive theory and the one that has the most experimental backing, is the enzyme theory originally propounded by Robison.[11]

The enzyme, or phosphatase, theory of bone calcification has been summarised by Kay[12] as follows: "The osteoblasts, the hypertrophic cartilage cells, and certain cells of the inner portion of a growing bone, contain or can secrete a very active phosphatase which, by hydrolysing the salts of phosphoric esters brought to the ossifying zone by the blood stream, causes a local increase in the concentration of the phosphate ions. The solubility product for calcium phosphate, either $Ca_3(PO_4)_2$, $CaHPO_4$, or some more basic compound, which is probably very nearly reached at the concentration of inorganic phosphate and ionised calcium normally present in the circulating plasma at normal pH, is thus exceeded locally, and a deposition of calcium phosphate is brought about in or near the cells which secrete the active enzyme."

The evidence in favour of the phosphatase theory is briefly this:—

1. Phosphatase has been demonstrated as appearing simultaneously with the onset of ossification in both cartilage and membrane bone.

2. Cartilage which is not destined to ossify, *e.g.*, costal cartilage and the cartilage of Meckel's bar, do *not* contain phosphatase.

3. There has been demonstrated in the blood a small quantity of calcium glycerophosphate, a substance which can be readily hydrolysed by phosphatase, and would therefore provide a suitable substrate.

Many experiments have been performed on calcification in vitro, and it has been shown that ossifying cartilage when suspended in solutions of calcium glycerophosphate does undergo calcification, but Robison has shown quite clearly that there is a subsidiary mechanism involved, as well as the main phosphatase mechanism, and that this subsidiary mechanism is sensitive to cyanide poisoning. Up to now it has been found impossible, owing to technical difficulties, to determine the exact chemical state of the mineral constituents of bone, although calcium carbonate,

some phosphate of calcium, and also small quantities of magnesium are known to be present.

Some observers[13] contend that a complex salt is formed in which the calcium and the phosphoric acid group are united in a complex action which combines with carbonic acid as the anion; but on the whole the alternative view, based chiefly on X-ray crystallography, that the calcareous part of bone consists mainly of a substance resembling the mineral podolite ($CaCO_3 2Ca(PO_4)_2$) seems the most acceptable. Incidentally, it has been discovered that rachitic bone is not deficient in phosphatase, and it is likely, therefore, that the root cause of rickets is to be traced to faulty blood composition, rather than to any inherent defect of the skeleton. This is borne out by the observation that intravenous injections of calcium glycerophosphate can cure rickets in rats.

Phosphatase does not occur only in bone, but is also found in other tissues, notably the kidney, the intestine, and the blood; but it is not certain whether the phosphatases found in the various tissues are identical. It seems probable that the phosphatases of all tissues, including the blood plasma, are one and the same, but it is just possible that the phosphatase of the red blood corpuscles may be distinct. The origin and functions of the phosphatases in tissues other than bone can only be vaguely surmised; it is possible that the phosphatase of the kidney may be connected with phosphate excretion, and that in the intestine with phosphorus absorption. In connection with the phosphatase of the blood, Morrell Roberts[14] noticed that its concentration is affected in case of obstructive jaundice, and explained this by supposing that phosphatase either is formed in the liver and secreted into the bile, or else is transferred like bile pigments from the blood into the bile. He considers it possible that increased blood phosphatase may cause bony changes, and hints that in osteitis deformans (Paget's disease), which is characterised by a high blood phosphatase figure, the bony changes may be a result and not a cause of this condition.

The action of phosphatase, as is the case with nearly all enzymes, is reversible—that is to say, under suitable conditions it can synthesise phosphoric esters from inorganic phosphate and other material. Arising out of this are two possibilities: one, that phosphatase may play a part in the resorption of bone under both physiological and pathological conditions, and the other that the action of phosphatase in normal ossification may be synthetic as well as hydrolytic. On this hypothesis ossification is explained thus: First, hydrolysis of esters giving rise to calcification of the cartilaginous matrix; then, synthesis resulting in absorption of the calcified cartilage; and finally, hydrolysis again, resulting in calcification of the bone matrix.

There is at least one other factor in bone metabolism which calls for mention, and that is the role of the periosteum. It was shown as early as the sixteenth century that growing bone was able to take up the dyestuff madder when this was present in the diet.

The story of how the scientific value of madder was discovered in England is an example of how an inquiring mind may derive information from the strangest sources. A young London surgeon, John Belchier, was dining one evening with a friend of his who was a calico merchant. Belchier observed that the bones of a chicken which was placed before him were unnaturally coloured, they being of a vivid scarlet hue; on going into the matter, Belchier found that his thrifty host used to feed his poultry on bran which had been previously used in his calico factory for absorbing drippings of dyestuffs, among them madder. This property of staining growing bone, possessed by madder and its extracts, has been turned to good account by many workers. By giving the dye to animals in their food, and subsequently examining their bones post-mortem, it was found that during growth new bone is deposited in layers immediately beneath the periosteum. By feeding animals for certain periods alternately with and without madder in the diet it is possible to produce in the bones a ring structure of alternate red and white rings, the pattern resembling that seen in cross-sections of a tree trunk. The moral of these experiments is that new bone is laid down during growth immediately beneath the periosteum presumably by activity on the part of the latter, similar to that displayed during ossification in the embryo. The periosteum also, by reason of its vascularity, plays a part in the nutrition of bone. It also may play a part in repairing the bone after injury, although it is not indispensable in this capacity, since it is sometimes possible for bone to regenerate without the aid of the periosteum, by means of the activity of osteoblasts in the bone marrow.

Madder experiments have also been carried out to demonstrate that the spongiosa is depleted when animals are fed on diets containing insufficient bone-forming elements.

There remains one more or less distinct class of evidence which has a bearing on the processes of bone metabolism—that is the evidence derived from cases of persons (and animals) suffering from various forms of poisoning due to the entry of certain heavy metals into the system. The metal which most commonly intrudes in this way is

lead, and it is found that this is always deposited in the bones. There is also reason to believe that it is deposited as insoluble lead phosphate ($Pb_3(PO_4)_2$). Similar deposition of silver, strontium and radium has been reported.

What is more interesting is that the same measures which tend to cause resorption of calcium salts from the bones, viz., acidosis and administration parathormone, also cause resorption and excretion of the lead. This phenomenon fits in very well with the phosphatase theory of calcification, and also goes to show that the mechanism responsible for the deposition of bone-salts is a purely physico-chemical one as opposed to a vital one, since it is evidently incapable of distinguishing between the physiological calcium and the toxic lead.

In conclusion, I will briefly recapitulate the chief factors known to be concerned in the physiology of bone metabolism, although I fear that it has not been possible for me to give a very satisfying account of the subject, not only because of my own limitations—for I cannot hope either to have given a complete résumé of the available knowledge or to have presented the various components of this very composite picture in their correct perspective—but also because there exists even in the highest circles a depressing nescience on many points connected with the subject, and consequently any account of it as a whole must be to some extent incoherent. To summarise, then, the principal feature of bone tissue is the presence in its matrix of inorganic calcium salts, mainly the phosphate; the proper absorption into the blood stream of the calcium and phosphorus requisite for bone formation and its metabolism is dependent on the action of vitamin D; the deposition of calcium phosphate in ossifying tissues is linked up with the activity of an enzyme, phosphatase, which will liberate locally inorganic phosphate from the organic phosphoric esters in the blood. The inorganic salts, once they have been deposited in the bone, are not fixed there permanently, but may, under the action of various agents, in particular of the parathyroid principle, be resorbed into the blood stream. These fragments of the complicated story of physiological bone metabolism are known; " the rest," in the words of Hamlet, " is silence."

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The Nightmare

WHEN your first patient comes, with his receding gums,
You put in some very hard thinking;
Your legs start to shake, and your heart gives a quake,
You feel that you're visibly shrinking.

You pick out your trays in a kind of a daze,
And determine to see what's before you;
The patient's delight at your obvious fright
Can be felt from the moment he saw you.

You have five or six tries, amidst agonised cries,
From the victim you've pinioned securely;
But you're bound to confess the impression's a mess,
While the demonstrator listens demurely.

He has but a look at the impression you took,
Then says, in the tones of a master:
" To me it's quite clear, ' compo.' won't do here;
I think you had better use plaster."

So you start once again on your dismal refrain,
And mix up a bowl-full of plaster;
The impression is bad and everyone's mad,
And your heart's beating faster and faster.

Now everyone's watching, your patient is coughing,
How you wish you could sink through the floor!
But stop! What's that ringing? That horrible ting-ing?
It's morning! The nightmare is o'er.

SPYN.

A Case of Kraurosis Vulvæ Treated with Ovarian Extract (Œstrin)

By P. M. F. Bishop, Esq., B.M., B.Ch.

THE CASE

MRS. C., aged 33, had her right ovary and tube removed eight years ago, on account of a tubo-ovarian abscess. Six years ago the left ovary and tube were removed and a subtotal hysterectomy was performed. Menopausal symptoms gradually developed and have increased in severity since that time, her chief complaints being vaso-motor disturbances—hot flushes—dyspareunia and, for the last year or two, kraurosis vulvæ. Her husband's sympathy for her plight has gradually become focussed on his own enforced continence, and he has recently been threatening to leave her. This situation has aggravated the nervous instability of her menopausal condition, and on occasions her behaviour at Out-patients has been lachrymose and hysterical.

She saw Mr. Frank Cook at Out-patients at Chelsea Hospital for Women about a year ago. Most of the local remedies for kraurosis having failed, small doses of " œstroform " (British Drug Houses' preparation of ovarian follicular extract) were prescribed. In September last he transferred her to the Endocrine Clinic at Guy's. Here she was seen both by Dr. A. C. Hampson and myself. For the first month she received 100 international units of " Menformon " (Organon Laboratories' preparation of ovarian follicular extract) daily by mouth, while for the next two months the dose was increased to 1,000 international units. During this period her general condition improved, the vaso-motor disturbances were not so troublesome, and, though the vulva appeared to be slightly less red and tender, she still complained of local irritation.

On December 19th she was again lachrymose and depressed, and complained of intense vulval irritation. A large dose of œstrin—50,000 units of di-menformon-benzoate—was administered intramuscularly. The next day she presented herself at the hospital in a state of alarm. On examination, two swellings, each the size of a hen's egg, were found on either side of the vulva in the region of the labia. These were hot and tender, and she complained of a slight brown, ? blood-stained, discharge from the vagina. Treatment was temporarily discontinued.

On January 2nd she was again seen at Out-patients. She said that when the tenderness of the swelling had disappeared she felt much improved. The irritation had ceased, and on examination the mucous membrane of the vulva was no longer atrophic, but presented a perfectly normal appearance and was lubricated by an adequate amount of mucous secretion. She had regained her sex desire to an extent which was noticeable to her husband, and both he and she were grateful. The hot flushes had almost disappeared. The smaller doses of œstrin were prescribed for a further month (1,000 international units daily by mouth). At the end of this time she was again depressed. The great expectations of her husband and herself had not been fulfilled, and they had once again become estranged. She complained that the kraurosis was as bad as ever, though on examination the vulva still appeared perfectly healthy and normal. Another large dose (50,000 units of di-menformon-benzoate) was injected intramuscularly, and was supplemented by 1,000 units of menformon by mouth daily. This was on January 30th.

On February 2nd, her sex desire returned, and on February 3rd she was able to enjoy a perfectly satisfactory intercourse, the first for six years. After this the libido gradually waned, and intercourse on February 7th was accompanied by less desire, but no dyspareunia. On February 23rd intercourse was distasteful and painful. During this month she had been feeling much better in herself, and had experienced no hot flushes. Her husband was well content, and the domestic situation was once again cheerful. She has now been ordered a large dose of œstrin once a fortnight and the smaller dose daily by mouth.

EXPLANATORY NOTE ON THE ADMINISTRATION OF OVARIAN FOLLICULAR EXTRACT

Œstrin is assimilated if given by mouth, but, on the basis of animal experiments, it has been calculated that about five times the intramuscular dose must be administered to achieve the same effect. Oral administration is suitable in the treatment of cases of minor ovarian deficiency, such, for instance, as the vasomotor disturbances associated with the menopause. Standardised extracts prepared from crystalline keto-hydroxy-œstrin are therefore supplied in sugar-coated tablet form by a number of commercial establishments. One example of such a standardised extract is menformon tablets, which are made up in doses of 100, 500 and 1,000 international units. In order

that very large doses of œstrin may be administered in concentrated form, use is made of the partially hydrogenated œstrin compound of Schwenk and Hildebrandt, di-hydro-œstrin, and if this is prepared in the form of a salt of benzoic acid, di-hydro-œstrin-benzoate, the effect of the injection is more lasting owing to the fact that it is less readily excreted from the body. By employing this form of œstrin as much as 100,000 mouse units of œstrin may be obtained in an oily solution of 1 c.c. This is of considerable importance in view of the modern treatment of gross ovarian deficiency, for in cases of primary amenorrhœa or severe secondary amenorrhœa, $1\frac{1}{4}$ million units may be given, divided into five doses, over a period of fifteen days. Thus, in the case here described, the large dose of 50,000 units of di-menformon should have 250 times the effect of 1,000 international units by mouth. (In the Organon preparations the unit of di-menformon is equivalent to the international unit of menformon, as tested on mice. Thus, in consideration of the fact that the intramuscular route is five times as effective as the oral route, 50,000 units of di-menformon intramuscularly are 50×5 times as effective as 1,000 units of menformon by mouth.)

DISCUSSION

The points of interest in this case are (1) the production of the labial swellings and the vaginal and vulval secretion in a castrated woman by the administration of œstrin; (2) the relief of the irritation and dyspareunia associated with kraurosis vulvæ; (3) the reappearance of sex desire after six years' frigidity; (4) the relief of menopausal vasomotor symptoms, and (5) the induction of a sense of well-being.

Considering these points one by one :—

(1) The functions of œstrin may be briefly summarised as producing proliferation, development and activation of all the female extra-ovarian sexual organs. These effects are accompanied by an increase of the local blood supply to the organ, associated with vaso-dilatation and transudation of fluid into the surrounding tissues. In the present connection the observation of numerous workers, such as Allen,[1] Hartman[2] and Zuckerman,[3] on the sexual skin of the primates, particularly *Macacus rhesus* and *Papio hamadryas*, is of primary importance. They have found, in the intact female animal, redness and swelling of the "sexual skin" (vulval epithelium) to correspond with the height of follicular acivity, and to appear at about the time of ovulation. This reaction has, in fact, been utilised to determine the time of ovulation in these primates. Furthermore, the same phenomenon has been produced in spayed animals by the injection of œstrin. There seems to be no doubt, therefore, that the vulval swelling in the case here reported is exactly analagous to the activation of the sexual skin in primates. With regard to the appearance of mucous secretion from the vagina this is also found to occur coincidently with the vulval swelling and the increase of sexual activity in the macaques and baboons studied by the zoologists.

So far as I know this is the first case in which a marked vulval swelling has been noticed to occur in a human female after the injection of œstrin.

(2) The dyspareunia in this case was, of course, entirely due to the soreness of the atrophic vulva, and consequently disappeared as soon as the kraurosis was relieved.

(3) The reappearance of the sex desire was a very definite observation in this case, and was entirely dependent on the œstrin injections. In all species of animals in which the sexual cycle has been investigated it has been uniformly observed that the peak of sexual activity corresponds with the height of the follicular phase, and, though rhythmical variations in libido are usually not well marked in the human female, there is no doubt that they are dependent on the secretion of œstrin.

(4) The considerable amount of clinical evidence available points to the fact that the vasomotor disturbances of the menopause are primarily due to the disappearance of œstrin owing to the degeneration or ablation of the ovaries, and the control of these distressing symptoms by the administration of standardised ovarian follicular preparations is one of the most encouraging results of clinical endocrinology.

(5) It has been noted by several observers that the administration of œstrin for whatever indication frequently induces a sense of well-being in the patient, which, though in itself perhaps a minor consideration, is nevertheless a factor which not only assists the physician in his treatment of the difficult menopausal syndrome, but also enhances his reputation in the eyes of a patient who is only too frequently apt to burden his life with her querulous complaints.

REFERENCES

1. Edgar Allen, 1927.—The Menstrual Cycle of the Monkey, *Macacus Rhesus*: Observations on Normal Animals, the Effects of Removal of the Ovaries and the Effects of Injections of Ovarian and Placental Extracts into the Spayed Animals. *Contribution to Embryology*, Washington, 98, vol. lxxxv, pp. 1-44.
2. C. Hartman, 1928.—A readily Detectable Sign of Ovulation in the Monkey. *Science*, New York, vol. lxviii, No. 1767, pp. 452-453.
3. S. Zuckerman, 1930.—The Menstrual Cycle of the Primates, Part I. General Nature and Homology. *Proc. Zool. Soc. Lond.*, No. xlv, pp. 692-754.

THE DEBATING SOCIETY

THE fifth meeting of the season was held on March 29th in the College Smoking-room. Dr. A. H. Douthwaite was in the Chair. The Minutes of the previous meeting having been read and carried, the Chairman invited Mr. O. B. Deiter, of the British Osteopathic Institute, to propose that " This House considers that the Principles and Practice of Osteopathy should be included in the Medical Curriculum."

Mr. O. B. DEITER wished to break down the barrier between osteopathy and orthodox medicine. He recounted how the originator of osteopathy, becoming depressed by the inadequacy of his drug treatment, became imbued with the idea of structural integrity. Osteopathy has prospered in America, he told us, till there are now six colleges devoted to it, demanding a four-years' course. He claimed many cures where orthodox medical treatment had failed. Mr. Deiter here became so carried away by his enthusiasm that he somewhat lost his bearings, and brought his speech to a precipitate and somewhat unexpected end. He told us in a very general and non-committal way a little of the principles but nothing of the practice of osteopathy.

Mr. H. J. B. ATKINS, opposing the motion, begged the House to approach the problem with an open mind and, above all, to cast aside the popular prejudice that by inviting osteopaths into the brotherhood of healing they were contaminating the crystal-clear waters of the profession with the slime of charlatanism. He denied the osteopath's contention that all disease could be explained by anatomical dysfunction, and criticised some of their results on the grounds that testimony from patients themselves was valueless. He suggested that X-ray evidence of an osteopathic lesion had never been produced, considering the reason to be that no such thing existed. He then poured considerable and effective ridicule upon osteopathy as a whole by quoting at some length from a distinctly bogus-looking copy of the *Evening Standard* the story of one Ruboff, how he cured the borborygmi of the Countess of Folkestone by the expedient of massaging her ears. He concluded by accusing the osteopaths of an attitude of flippancy towards the medical profession. A good attacking speech, surprisingly vitriolic after a conciliatory start.

Dr. MCDONALD, also of the British Osteopathic Institute, seconding the motion, admitted being a Bart.'s man, but after that fought back bravely. He stated that the osteopathic lesion is visible on a stereoscopic X-ray, and urged the ordinary practitioner, whom he criticised for seldom, if ever, examining a patient's back, to consider this lesion when he had failed in other directions. He claimed a trained and not a natural ability for the osteopath, thereby differentiating him from the bone-setter. He urged us to take no notice of such as Ruboff. He admitted that in some cases the osteopath worked empirically, but levelled the same criticism against some medical treatments, and maintained that the end justified the means. He gave, as his conception of the osteopathic lesion, a fibrositic nodule round a rigid joint, which might involve and irritate spinal nerves and rami communicantes to produce their normal response to stimulation. Without producing any very tangible evidence, Dr. McDonald tried to produce some justification for osteopathy, though we still knew little of its practice.

Mr. ROSCOE CLARKE, seconding the opposition, was the first speaker to consider the actual wording of the motion. While he admitted that we had been slow to realise the possibilities of treatment by movement rather than by rest, he would support a subtraction from, rather than an addition to, the already too extensive medical curriculum, it resting with the osteopaths to prove that they had something valuable to add which was not already taught before he could condone with such an addition. He suggested that many of the osteopath's " cures " were in hysterical and neurotic cases. Mr. Clarke had exchanged views with an osteopath whose main principle was apparently improvement in the local blood supply, and whose conception of the lesion, in contrast to that of Dr. McDonald, was a spasm of the muscles surrounding the small joints of the back, which,

having a poor nerve supply, gave poor indication of damage, which spasm might affect reflexes as well as direct impulses. This would explain lack of X-ray evidence. Mr. Clarke defied anyone to prove a word of this hypothesis, and suggested that in spasm due to acute arthritis manipulation might do serious harm. He contended that the practice of osteopathy was already understood and taught in the massage departments, and that, as there were no principles worthy of the name, the motion must fall. In the most effective speech of the evening, Mr. Clarke successfully tucked away many of the untidy ends left lying about by his predecessors.

After an interval for refreshment the meeting was thrown open to general discussion.

Mr. COXON successfully confused osteopathy with manipulative surgery.

Mr. PAYNE said that manipulative treatment was already taught for specific and demonstrable lesions, and that until osteopathy could produce such he would be against it.

Mr. WOODLAND had evidently revised his Anatomy for the occasion.

Mr. BOX demanded why, if there was an osteopathic lesion, patients with spondylitis deformans did not develop mumps, rabies and other nauseating complaints.

Mr. CARDEW said, roughly, that the hypothesis of an undemonstrable lesion should be abandoned.

Mr. LAMB subscribed a note of comedy, and revealed the mercenary side of his character, concluding that if one was honest in medicine, one starved.

The SECRETARY put forward suggestion as the means to the osteopathic end.

An unidentified speaker talked about the reticulo-endothelial system.

The CHAIRMAN maintained that, as the brains of the wealthier classes were so often situated below the level of the navel, suggestion played a great part even in general practice, and that freak treatments such as M. Ruboff's might well succeed if backed up by sufficient personality. He considered that manipulation might be of use in certain cases, but could find no evidence of its effect on the body as a whole and on visceral disease, and invited our visitors to cure any such case in his wards by their methods.

At this junction the reporter, unfortunately, had to leave the meeting, but understands that, after the usual summing up, the motion was lost by 44 votes to 7.

The Physical Society

ON Thursday, February 28th, a joint meeting of the Guy's and St. Thomas's Physical Societies was held at St. Thomas's Hospital. Eight cases were shown of quite remarkable interest, and the meeting deserved better support from the visiting hospital than it actually received.

After examining the patients we adjourned to a smoking-room, the luxurious elegance of which struck us as contrasting strangely with the neo-lavatorial decoration of the "Spit." Here the meeting opened with a case of tumour of the acoustic nerve, and proceeded merrily to the click of billiard balls from an adjacent room. When, with the help of Dr. E. T. Conybeare and Dr. Pantin, from the Guy's contingent, the site of the tumour had been definitely located, we proceeded to a cases of muscular dystrophy, over which the balance of opinion was in favour of a diagnosis of myasthenia gravis.

There followed an interesting case of fracture of the radius with poor union, followed by another fracture of the same bone (in the same patient), in which poor union again ensued. This case was presented as a dystrophy of bone, but we were unable to rid ourselves of an uncomfortable suspicion that the real cause of the malunion was imperfect immobilisation. A heated discussion followed the statement of the case, during which the spirit of the patron Saint—that "angelic doctor"—seemed temporarily to absent itself from among us. From the depths of the controversy we were every now and then jerked back to reality by the joyous cries of the billiard players as the red dropped or the white came out of baulk, and when the advocate of the dystrophy view was finally left refuted by an exposition of the work of Leriche and Policard, a mis-cue evoked a reverberating, "Oh, Hell!" which must have aptly summarised his feelings.

Among others, there followed a remarkable case of apparent tetany with a normal blood calcium, the differential diagnosis seeming to lie between tetany and hysteria, a case of gout and a case which appeared to us to be a carcinoma of the lung with a metastasis in the right cerebral hemisphere, an opinion of which Dr. Pantin also forcibly delivered himself.

The Guy's members were ably represented in debate by Dr. E. T. Conybeare and Dr. Pantin, while the sonorous periods of Mr. Bookless (who did not, as on a former occasion, "get his dates wrong") filled the occasional silences, but it was a pity that there were not more speakers from this hospital on an occasion when so much interesting matter was put before us.

Of the St. Thomas's speeches there was one brilliant oration which deserves special mention on the subject of "Woolner's tip." The speaker told us that the originator of the term was not the doctor who described it, but the artist who owned it. He gave a graphic summary of the events which led to Woolner's adventurous sally to the Australian goldfields in 1856, and, somewhat to the impatience of the more medically minded, passed on to us the welcome information that it was this departure that inspired Ford Madox Brown's famous picture, "The Last of Old England." He added that Woolner's work could be seen in the shape of the statue of Tennyson that adorns the Embankment, and finished by recommending all keen students of uric acid metabolism to join a pilgrimage to this great monument. The speaker did not mention what few people now know of this forgotten artist—that, although his work is not represented in any national collection, he was an original member of the pre-Raphaelite brotherhood. We understand that a lineal descendant of this former master has lately joined the staff of St. Thomas's Hospital.

This lively and entertaining meeting ended at about 11 o'clock, when, out of gratitude to our hosts, we drove slowly via the Embankment, whence, having stood for a few moments in bare-headed reverence before Lord Tennyson, we went home and read our Keats.

Correspondence

The Peace Ballot

To the Editor of the GAZETTE

SIR,—There are two points in my letter on the Peace Ballot on which you commented in "Passim," which I feel bound to refer to shortly. I am afraid one of them was a misunderstanding, due to insufficient clearness on my part. When I suggested that it would be unwise to answer "Yes" to the first part of Question 5 and "No" to the second part, but reasonable to answer both parts in the affirmative or negative, it was for this reason. If a nation is going to break its Covenant and go to war it may have reckoned on the possibility of having to fight other nations, so that if economic measures are taken by these other nations, the latter may find themselves threatened with war. To avoid war, the economic measures would have to be cancelled, but in this case it would have been better if they had never been taken—this is the bluff. According to this school of thought, economic measures against a powerful nation would inevitably mean war. The question as set probably envisages the other possibility, viz., that economic measures might be insufficient to restrain the attacking nation, and military measures might be required; in this case "Yes" to (*a*) and "No" to (*b*) might be reasonable, though a bit half-hearted.

The other is a question of fact. A very common argument against answering Question 4 in the affirmative is that the State, as contrasted with private enterprise, is dilatory, wasteful and incompetent. Actually it was the private firms that failed in the last war, and this is not incompatible with your quotation, which is not a good advertisement for the contractors and rather suggests that Mr. Lloyd George was used to their failure. I have not his Memoirs at hand, but the proof that my contention is right is provided by the following extracts from the Official History of the Ministry of Munitions. I enclose other passages for your own perusal:—

"The best criterion of the achievement of the Ordnance Factories is perhaps to be found in a reference to the figures of their production during the war. The output of the Arsenal was large in quantity, varied in character, and reliable in quality, and the striking increases in the outputs of the various stores between 1914 and 1916 are the best witness as to the manner in which the factories fulfilled the purposes for which they were designed. . . ."

(Autumn, 1914.) "Such returns . . . indicated month by month ahead the output which contractors were pledged to produce. It was not yet realised how utterly unreliable *as regards early deliveries* these promises were likely to prove."

"The failure of the main shell contractors to make good their promised deliveries was already an established fact at the end of 1914."

Yours, etc.,

E. P. POULTON.

25, Upper Wimpole Street,
W.1.

Nursing Staff Entertainment

An Entertainment will be given by the Nursing Staff, Guy's Hospital, in the Physiology Theatre on Monday, Tuesday and Wednesday, April 29th and 30th and May 1st, at 8.15 p.m. An attractive programme to suit various levels of the brow. The proceeds will go to the Cosmo Bonsor Memorial Scholarship Fund, which is to provide post-graduate education for a Guy's Nurse.

Tickets, 2*s*. 6*d*. and 1*s*. 6*d*., reserved. Tickets may be had from Sister Florence Taylor, Sister Margery Marriott, or any member of the Nursing Staff at Guy's Hospital.

Sport

Rugby

Guy's v. Northampton

ON Saturday, March 30th, Guy's played their last match of the season when they visited Northampton and were defeated by 6 goals and 3 tries (39 points) to 2 tries (6 points).

Both sides were well below full strength, but Northampton were very strong forward, and their pack included such stalwarts as Dicks, Weston and Longland.

Guy's kicked off before a small attendance, and Boundy made a clever run to the Hospital's 25, but his pass inside was intercepted and Steytler transferred play to the other end of the field.

The home side were dangerous in the next few minutes, and Chorlton was nearly over when he was thrown into touch near the corner flag. In another raid, Longland received a head injury and had to retire to receive medical attention.

A clever move by R. C. S. Dick took play into Northampton's half, but a passing movement between the Hospital three's broke down and the home side dribbled the ball to the goal line. Here Bowles carried over and, from a five yards' scrum, Northampton heeled and Chorlton went over near the corner flag after ten minutes' play.

For a few minutes Guy's played up well and more than held their own. A great run by Dick, who passed to Fichardt when tackled, led to a scrum on Northampton's line, and after a drop at goal had been charged down, Kark made an attempt to kick a penalty goal, but failed.

Almost immediately Dick made another good run, and eventually Daniels was compelled to touch down.

From the drop-out Chorlton was given the ball and, showing great pace, beat three men in a run to the Hospital line and, rounding the full-back, he touched down near the goal-posts for Daniels to convert.

After Kark had missed with another penalty, Dick broke through cleverly and once again the Hospital established themselves in their opponents' 25. Stanyon-Jaques led a dash to Northampton's line and, although this was beaten back, Guy's came again and Dick scored an unconverted try near the corner flag.

The home team responded at once; Boundy, following a run and short punt which was misfielded by one of our backs, followed up and registered a try, which Daniels converted.

Towards the interval Guy's pressed heavily, and in another raid the Hospital would probably have scored, but Harrington knocked on in the home side's 25.

Within two minutes of the restart Chorlton put the home team further ahead, following some good passing between Vann and Brookes, but Daniels just failed to kick a goal.

Northampton were now playing with rare dash, and, after the forwards had indulged in some rapid handling, the ball reached Chorlton, who ran splendidly, but he was stopped a yard from the line. Northampton kept up a hot attack, and after two attempts for penalty goals had failed, Nash made a beautiful run and scored behind the posts for Daniels to kick another easy goal.

Soon after, Vann obtained the ball from a scrummage, fed Brookes, and sent King away, who cut inside and swerved past Bowles behind the posts for another try, which Daniels converted.

Kark, Crampton and Rees made a great effort for Guy's, but they were soon repelled, and Boundy followed up a kick ahead and registered a try, for Daniels to kick his fifth goal.

Guy's were now a well beaten side, and it came as no surprise when Boundy and Dicks scored further tries, one of which Daniels converted.

Near the end good footwork by the Hospital forwards led to Harrington crossing for a try, too far out for Dick to convert.

Team.—V. H. Bowles; G. F. Rees, T. Fichardt, R. C. S. Dick, E. W. Adkins; J. van A. Steytler, K. A. Stanyon-Jaques; S. M. Whitteridge, P. H. Crampton, M. R. Kark, E. R. Davies, E. B. French, W. F. Frazer, C. F. Ziervogel, J. L. Harrington.

Hockey

Cup Final

Guy's v. St. Thomas's

GUY'S reached the Final of the Inter-Hospitals' Cup after a decisive victory over London Hospital in the replayed Semi-Final. It is now some years since Guy's reached the Final, and a large crowd turned out to watch the game in ideal weather conditions.

Guy's lost the toss and played with the sun at their backs. St. Thomas's soon commenced to attack and looked like scoring on no less than three occasions during the first fifteen minutes. Gillet in goal played extremely well, kicking strongly, and gradually Guy's defence began to find its confidence and feed the forwards. The forward line was rather ragged, but before half-time began to attack continuously, and St. Thomas's were forced to concede a corner. This did not, however, result in a goal, and at half-time the score was 0—0.

It was not until about a quarter of an hour after half-time that St. Thomas's opened the scoring with a fine individual effort by their outside left, who took the ball from an outside 25 bully in the St. Thomas's half and, beating the half and both backs, put in a shot which gave Gillet little chance.

This reverse did not, hoewver, have the effect of putting Guy's off their game, and Richmond soon equalised with a hard shot from a corner.

Guy's continued to have as much of the game as their opponents, but the forwards became rather lacking in combination, although at times it seemed possible that they might score.

At full time the score was level at one all, and it was decided to play an extra twenty minutes.

About five minutes later St. Thomas's scored following a breakaway and centre by their outside right, and, although Guy's continued to fight back hard, St. Thomas's defence held out and there was no further score.

For Guy's, Gillet in goal played a brilliant game, and, after the first few minutes, the backs were steady. Richmond at centre-half was always prominent, and suffered little by comparison with Marrable, the Irish International who played in the centre for St. Thomas's.

Result.—Guy's, 1; St. Thomas's, 2 (after extra time)

Team.—E. Gillet; G. M. Turner, R. G. Archer; D. P. King, A. G. Richmond (Capt.), C. F. Wright; J. B. Franklin, C. A. Clarke, J. J. M. C. Jenkins, H. G. N. Cooper, E. B. Rowe.

Hospital Information, etc.

Notices

Biennial Dinner

The Guy's Biennial Dinner will be held at the Connaught Rooms on the evening of Friday, November 13th. Mr. A. W. Ormond will be in the Chair. Dr. Geoffrey Marshall is the secretary of the Dinner, and he will publish further details of the arrangements as soon as possible.

Astley Cooper Studentship

This Studentship, tenable at Guy's Hospital Medical School, will become vacant on October 1st, 1935.

The Student, who is called the "Astley Cooper Assistant to the Curator of the Gordon Museum," will be elected for a period of three years.

Particulars regarding the Studentship can be obtained from the Secretary to the Astley Cooper Trustees, Medical School Office, Guy's Hospital, S.E. 1, to whom applications for the post should be addressed on or before May 1st, 1935

Pass List

UNIVERSITY OF LONDON.
SECOND EXAMINATION FOR MEDICAL DEGREES.
PART I.
March, 1935.

J. A. Bowen-Jones.
H. P. Brown.
F. R. Buckler.
P. S. Clarke.
M. E. Davies.
A. E. J. Etheridge.
J. M. French.
H. Greenburgh.
A. C. Greene.
W. E. Greenwood.
W. R. L. Harrison.
C. F. Hawkins.
C. H. Phillips.
R. C. Ponder.
T. M. L. Price.
C. P. F. Quinnell.
C. H. J. Rey.
F. W. B. Rilstone.
R. G. Robinson.
M. A. Shellim.
G. F. Smart.
J. H. Smart.
D. Stafford-Clark.
I. M. G. Stewart.
R. E. Horton.
H. A. Lee.
D. R. Levinson.
D. C. Lewin.
H. F. Lunn.
N. L. McNeil.
C. W. Peck.
G. N. J. Thomas.
D. Tumarasvin.
H. D. Venning.
J. Y. D. Wakeham.
K. H. Walter.
E. Williams.
H. Wormald.

SOCIETY OF APOTHECARIES.
PRIMARY EXAMINATION.
April, 1935.
Anatomy.
H. B. O. Cardew. C. R. Morgan.
Physiology.
H. B. O. Cardew. C. R. Morgan.

FINAL EXAMINATION.
March, 1935.
Medicine.
A. Ponder.
Midwifery.
S. E. Osborne.

Appointments

S. Hanreck, Honorary Dental Surgeon to the Horsham Hospital.

W. B. Hubbard, L.D.S., Dental House Surgeon to St. Johns Hospital, Lewisham.

Marriage

BICKNELL-RICHARDSON.—On February 9th, 1935, at St. Luke's Church, Cross Roads, Jamaica, Lewis Hope, eldest son of Mr. and Mrs. L. B. Bicknell of Kingston, Jamaica, to Mary Emma, eldest daughter of the Revd. and Mrs. P. B. Richardson of Lympstone, S. Devon, England.

Births

MARSHALL.—On March 28th, 1935, at 94, Sidwell Street, Exeter, to Helen, wife of C. W. Marshall, M.D. —a son.

FERNIHOUGH.—On 30th March, 1935, to Kathleen (née Oram), wife of Wing-Commander F. Fernihough, M.C., R.A.F., 9*a*, Beulah Hill, S.E.19—a son.

EDS. { D. P. K.
P. W. C.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX *27th April* 1935 *Number* 1220

PASSIM

WHEN we read in our daily papers of the turmoils which beset our European neighbours in their political spheres we cannot help but express our gratitude for the stability and graciousness of our own Royal Family. They have constantly shown by a multitude of kind acts how much they care for the welfare of the voluntary hospitals. King George has been the patron of Guy's since the death of his illustrious father, and on that occasion the editor of the *Gazette* wrote : " It is good to realise that King Edward has left as his successor in his great office one who has shown himself to be devoted heart and soul to the work of the hospitals, perhaps the most well-worth-doing of all charitable works. At Guy's we shall be able to claim a staunch friend and supporter in King George V." He went on to wish him abundant health and strength to sustain him in his great duties, and we feel that on the occasion of the Jubilee celebrations we can do no better than reiterate these wishes from the bottom of our hearts.

IF we could trust our memories, as we would wish, we could all pass our qualifying examinations without ever consulting a book, so varied is the clinical material which we have around us in the wards. Our memories, however, are for the most part poor things, and, into the bargain, fickle, so that we have to rely on our text-books as necessary evils. Furthermore, those who attain to the higher degrees have to consult the writings of others to keep themselves up to date and in touch with the advance of medical knowledge. There is so great a number of books published to-day that it would be impossible for any one man to read them all, and reviews of published works have become very valuable guides to direct us in our reading. It stands to reason that some reviews are better written, show more critical insight and are altogether more helpful than others, but we aim in the *Gazette* to obtain accurate reviews, and if a book is bad we don't attempt to mince our words in describing it as such. It is only along such lines that it is possible to bring the good books, those which really ought to be on every medical man's bookshelf, into bold relief. This number of the *Gazette* is primarily devoted to the subject of books, and we have included as many reviews as possible. The publishing firms have taken the opportunity of advertising more complete lists of their publications than usual, so that our readers may be reminded of both old favourites and books which have been written during the last year.

THE Physical Society has been invited to join a party from St. Thomas's Hospital on a visit to Amsterdam, where they will be the guests of the University. The expedition, which will consist of thirty, of whom six will come from the Hospital, will last from May 19th to May 23rd.

In Amsterdam they will stay at hotels. During the day rounds and lectures have been arranged ; the evenings have been left free from official engagements. The total cost, outside personal expenses, is estimated at £7 10*s*.

A very varied programme of lectures and demonstrations, all of which will be given in English, has been arranged. It commences at 9.30 on the morning of arrival, Monday, and continues until the Thursday afternoon. Vitamins, Brain Surgery and Tuberculosis in Children are amongst the subjects on which lectures will be given, and on the Wednesday afternoon Professor Noordenboo will do a ward round.

As recently as a month ago a party of Dutch students were in London to see the hospitals, and while here paid a visit to Guy's. The forthcoming visit, which has been organised by the St. Thomas's Physical Society, and is, indeed, a repetition of a similar one held last year, should provide a welcome opportunity of increasing contact between English and Continental student societies.

IT is some time since we drew attention to the progress on the building of Nuffield House. The outer brickwork has almost been completed, and the skeleton of the inside has proceeded almost as far, so that it is now possible for energetic house officers to indulge in a regular tour of the building during the slack hours of Sunday afternoon for the comparatively small expenditure of energy necessary in negotiating a few flights of stairs. The view from the top is rather limited by Hunt's House and the Medical School, but it is possible to get a glimpse of the dome of St. Paul's to the north, and to the south-west, where the view is less obstructed, the Battersea Power Station can be seen standing out in relief against the sky-line. The Park appears quite diminutive from this height, and the trees do not stand out as the giants which they appear from the ground. The question of how the block will be staffed when it is opened in the early part of next winter is occupying our minds, and many are the rumours current amongst us.

IN the notice of the date of the Biennial Dinner which appeared in the last issue of the *Gazette*, November 13th should have read "November 15th." We wish to apologise to Dr. Geoffrey Marshall for the error. The Dinner will be at the Connaught Rooms, where so many of its predecessors have been held so successfully. There are two classes of people in this world—those who live to eat and those who eat to live; but no matter to which you may belong the dining-table is your point of contact where you are on an equal level. This is why a dinner is the favourite way of effecting reunions. Of all dinners the Guy's Biennial Dinner is one of the most successful, and we hope that the number attending this year will be greater than ever.

THE Musical and Operatic Society are holding a dance on May 24th at the Westminster Palace Rooms. The price of the tickets will be 7*s.* 6*d.* single and 12*s.* 6*d.* double. This is well within the means of most of us, and we wish the Society success in their venture. We will publish further details of the arrangements when they are available.

WE published an Obituary Notice on March 30th of Mrs. Rose Henley, who died in Evelyn Ward on March 2nd. It has been suggested that her maiden name of Miss Billingshurst might be more familiar to our readers.

Obituary

CHARLES HAMILTON GOULD

AN Air Mail letter from Christchurch, New Zealand, states that "Ham" Gould was drowned in the Hurunui River on Saturday, March 16th, 1935, when, with five other men, he was fishing from a motor-boat which became waterlogged.

The actual circumstances of his death are only a matter of conjecture, but it appears from the evidence of the other men in the boat that he was drowned in an attempt to help another man who was hampered by long rubber boots.

He came to Guy's in 1909 with the Open Scholarship in Science, and later gained a certificate for the Wooldridge prize in 1911 and the Treasurer's Gold Medal for Clinical Medicine in 1913.

I first knew him as a Junior Dresser in 1911, and after being Assistant House-Surgeon to Mr. Rowlands, he became Sir Arbuthnot Lane's House-Surgeon from August, 1914, to January, 1915. He then took a commission as Surgeon-Lieutenant in the Navy, and after the war completed his M.B., B.S.Lond., and returned to New Zealand to practise in Christchurch for the last sixteen years.

That everyone spoke of him as "Ham" indicates the general feeling towards a very lovable person; this nickname was his throughout his time at Guy's, and followed him back into practice; probably it originated in his school days.

He was a very delightful companion in any form of sport, and I am reminded that in 1932 he called for me at 4.45 a.m. for a trip to fish for quinnett salmon. My generous host had called me and got us breakfast, which was all the more to his credit as he wasn't a fisherman. Having driven some 70 miles and lost our way several times, we arrived at the river at which we were to fish. We had to walk some distance across several boulder-strewn outlets of the Rakaia River, which become wide streams when the river is in flood. Four hour's fishing provided only one rise, which was lost, and, after cooking the "billy," a drive through glorious country in the heat of the day brought us back to Christchurch, when "Ham" started on his day's work.

Many Guy's men, not only in his own but also in the Home Country, will extend their very warmest sympathy to his wife and children in their bereavement.

C. H. F.

Dyspepsia

A Clinical Lecture delivered at Guy's Hospital by J. J. Conybeare, Esq., M.D.

GENTLEMEN,—If the term " dyspepsia " is to be interpreted in its literal meaning of an impairment of the power or function of digestion it might be held to cover not only all disorders of the gastro-intestinal tract, but also the digestive disturbances which may be associated with disease elsewhere, as, for example, cardiac failure, renal disease or infections in the respiratory tract. Dyspepsia in this sense is, therefore, a symptom of most of the illnesses to which the flesh is heir.

In actual practice, however, the term dyspepsia has come to cover a much more restricted field. Many of the earlier writers reserve the term for those disorders of digestion which are not associated with obvious pathological lesions in the gastro-intestinal tract. Thus it is not customary to describe the digestive symptoms resulting from the presence of a peptic ulcer or a growth of the stomach as dyspepsia. If, however, the principle is adopted of restricting the use of the term to those conditions where there is no structural abnormality in the gastro-intestinal tract, the use of such terms as appendix dyspepsia or biliary dyspepsia is unjustifiable. Moreover it will always be difficult, if not impossible, to rule any hard-and-fast line between organic and functional disease, and with increasing knowledge it is probable that some of the disorders of digestion which to-day may be regarded as functional may in the future be found to have an organic basis.

It is important to realise that dyspepsia is a symptom and not a disease, and classifications of dyspepsia should be based on ætiological grounds. Thus the digestive disturbances resulting from gall-stones or cholecystitis may reasonably be termed biliary dyspepsia, and similarly those associated with inflammatory conditions of the appendix are often described as appendicular dyspepsia. Diagnoses such as acid dyspepsia, flatulent dyspepsia, or atonic dyspepsia, though frequently made, are undesirable, as they are often based on a purely imaginary causation.

In dealing with digestive disorders more information is likely to be obtained from a careful consideration and evaluation of the patient's symptoms than from a physical examination. By the time that definite physical signs are detectable, advanced pathological changes must have occurred, and it should be the aim of the physician to arrive at a diagnosis at an earlier stage. Modern methods of clinical investigation, including X-rays, have done a great deal to aid the elucidation of dyspepsia, but they must not be allowed to be a substitute for a careful and thorough investigation into the patient's history and symptoms, which must remain the bedrock on which a satisfactory diagnosis can be founded.

If we exclude from our consideration peptic ulcers and carcinoma of the stomach, where pain is usually the most prominent symptom, flatulence is probably the symptom most frequently complained of by patients with dyspepsia. Most patients use the term flatulence to describe the eructation of wind from either the mouth or the bowel, and it is important when questioning a patient who complains of flatulence to ascertain the exact nature of the symptom, as gastric flatulence and colonic flatulence are likely to have quite different causes. Most patients who have gastric flatulence as a prominent symptom also complain of sensations of fulness and distension in the upper abdomen or lower part of the chest. Sometimes patients with distension and flatulence also complain of pain, but, if cross-questioned, they usually admit that their sensations are rather those of discomfort due to the distension than real pain.

In the vast majority of cases of gastric flatulence the eructated gas is odourless. Where this is not the case and the gas smells of sulphuretted hydrogen this is evidence of pyloric obstruction with gastric stasis and decomposition of proteins. In the rare condition of gastro-colic fistula the eructations may have a definitely fæcal odour.

Contrary to the belief of most patients who suffer from flatulence, the eructated gas is not a product of abnormal fermentation in the stomach, but is merely air which has been swallowed. Only too often patients with aerophagy, which in itself is not particularly troublesome, work themselves up into a severe anxiety state under the impression that their flatulence is evidence of some grave internal disorder. Their anxiety leads to repeated attempts to regurgitate, of which the only result is the swallowing of more air. Often a certain amount of the ingested air passes through the stomach into the small intestine, where it produces loud rumblings and borborygmi, which still further distress and embarrass the patient.

Flatulence is a symptom which varies very much in severity, and it is almost permissible to group cases into two categories, the noisy and the silent. Patients who regurgitate like the eruptions of a miniature volcano are less likely to have any underlying organic condition than are those who suffer from more or less silent flatulence. If a

patient with extreme flatulence is watched, frequent gulping of air can be readily detected. In such cases the mechanism of the condition should be explained to the patient and particular emphasis laid on the fact that the regurgitated gas is not the product of fermentation or acidity. Strict injunctions should be given that on no account should the patient attempt to " bring up wind." Once the habit of aerophagy has been established it becomes a conditioned reflex, and the patient often has an overwhelming desire to eructate. As this mainly occurs after meals it is a good plan to instruct the patient to keep a cork between his teeth for half an hour after each meal. This acts as a gag and keeps the mouth open, thereby inhibiting attempts to swallow. Such a procedure, provided it has been preceded by explanation and reassurance, may effect a dramatic cure.

Aerophagy and eructation can be performed voluntarily, as must be known to those who have travelled in the East. Among the Arabs loud eructations are regularly practised by guests at feasts as a mark of their appreciation of the fare provided, and the guest who does not conform by swallowing adequate quantities of air is thought to be lacking in courtesy. I well remember dining with an Arab sheik and being astounded at the facility and vigour with which the guests, including a British Political Officer, were able to perform.

Although flatulence of the gastric type may often be no evidence of organic disease, it is important to remember that it is frequently a symptom associated with pathological conditions in the gastro-intestinal tract. Chronic cholecystitis with or without gall-stones almost invariably causes flatulence and distension, which is usually chiefly troublesome after meals. The distension is often severe and leads to great discomfort if not pain. The distension and flatulence of biliary dyspepsia is probably due in part to aerophagy, but also to disordered gastric motility secondary to the inflammation of the gall-bladder. Flatulence is also often a feature in cases of duodenal ulcer, but it is then often accompanied by definite epigastric pain of duodenal type. Eructation may produce temporary relief, but attempts to repeat the act are liable to aggravate the symptoms by inducing aerophagy.

Flatulence and distension are also liable to result from hastily bolted meals and defective mastication. Whenever swallowing occurs a small amount of air passes down into the stomach. The more hurried the meal, the more air is swallowed. The size of the normal gastric air bubble is increased and produces distension and flatulence. These symptoms can be rapidly eliminated by advising the patient to amend his habits. Sometimes the omission of fluids from meals may be very effective. Needless to say, sufferers from flatulence should avoid aerated drinks, particularly sparkling wines such as champagne.

To recapitulate, flatulence and distension are common symptoms in the nervous and over-anxious type of patient, and often occur purely as a result of aerophagy and in the absence of any evidence of organic disease. On the other hand, they are also frequent manifestations in chronic gall-bladder disease and sometimes in duodenal ulcer. They also occur in the so-called " habit dyspepsia," due to irregular, hasty or ill-chosen meals.

Many patients who suffer from dyspepsia complain of what they term acidity. Very frequently this is purely an assumption on their part, suggested by the numerous advertisements of patent medicines which purport to remedy the condition. Unfortunately, the idea of acidity is often suggested to the patient by medical attendants, frequently without any evidence. In any case it is doubtful whether in itself increased acidity of the gastric juice really produces any symptoms, and it has been shown that if test meals are performed on healthy individuals without dyspeptic symptoms there are many high acid curves. It is probably no exaggeration to say that of the large number of patients who come complaining of acidity only a very small proportion really have gastric hyperchlorhydria. The only symptom which gives definite evidence of increased gastric acidity is acid regurgitation. This is characterised by sudden regurgitation into the throat and mouth of sour, burning fluid. It is not met with very commonly, but may occur in patients with duodenal ulcers.

Over-anxious patients with supposed acidity frequently get the idea that certain types of food aggravate their acidity. In consequence they tend to cut out from their diet one article after another, until they may eventually suffer from chronic inanition. In dealing with such cases it is usually wise to have a test meal performed. Often the gastric acidity can then be demonstrated to be normal or even low, and this may help to allay unnecessary anxiety and induce the patient to take a fuller and more reasonable diet.

Another frequent symptom in dyspeptics is heartburn. The sensation so described is one of burning along the course of the œsophagus. The area in which it may occur ranges along a vertical line extending from the xiphisternum upwards into the neck. The sensation may last for a few minutes only, or sometimes for longer periods, and varies considerably in intensity. It is often assumed to be due to regurgitation of acid gastric

juice into the œsophagus, but there is no evidence that this is so, as heartburn may occur in patients with normal gastric acidity or even complete achlorhydria. It is more probably due to tonic contraction in the circular muscle of the œsophagus. The occurrence of heartburn does not indicate organic disease, but it is a frequent symptom in patients who are overworked, over-anxious or fatigued. It can often be relieved by sodium bicarbonate. Dietetic readjustments and a holiday are valuable curative measures.

Vomiting is not a frequent occurrence in most patients with dyspepsia, and when it occurs persistently it usually indicates some organic lesion such as a gastric ulcer or pyloric obstruction, though occasionally examples of persistent hysterical vomiting are encountered. Nausea, on the other hand, is comparatively frequent. This is particularly true of the dyspepsia associated with gall-bladder disease. These patients often suffer from periods of nausea which come on quite suddenly and may last for several minutes. Although the sensation of nausea may be severe, it is not, as a rule, followed by actual vomiting of food. Nausea, especially in the mornings, is a characteristic of the dyspepsias associated with chronic alcoholism. This often occurs with clock-like regularity when the patient awakens, and it is accompanied by retching in which the patient brings up small amounts of glairy mucus and saliva. As the stomach is empty, no food is brought up. In addition to these symptoms, alcoholics have little or no appetite for breakfast, of which they rarely partake.

Rather similar symptoms occur in patients with pulmonary tuberculosis, and sometimes the first evidences of phthisis may be loss of morning appetite, nausea and retching. Sometimes in active tuberculosis the dyspeptic symptoms may be very prominent, and suggest the presence of a gastric ulcer as the patient may have considerable abdominal pain after food, nausea and vomiting.

Nausea, distension and heartburn occur fairly commonly in patients with anæmia, whether primary or secondary. This is specially true of pernicious anæmia and simple achlorhydric anæmia. The dyspeptic symptoms are not necessarily confined to the period when the hæmoglobin is very low, and at any rate in pernicious anæmia abdominal symptoms may precede the development of obvious anæmia. As pernicious anæmia almost invariably develops in patients who have gastric achlorhydria, it is possible that the dyspeptic symptoms which antedate the anæmia may be due to chronic gastritis.

Another occasional dyspeptic symptom is waterbrash. By this is meant the presence in the mouth of clear watery fluid without any of the burning or acid character of acid regurgitation. It is probably a sudden and excessive salivary secretion akin to ptyalism. Waterbrash may be associated with duodenal ulcer and chronic gastritis, but it often occurs in the absence of any demonstrable organic lesion. If the fluid is examined it contains no food debris, and there is no evidence that it is regurgitated from the stomach, as in acid regurgitation.

Hunger pain, though characteristic of duodenal ulcer, may also be a feature in the dyspepsia of patients in whom there is no evidence of an ulcer. It is often present in conjunction with gastric flatulence and waterbrash. Sometimes it is more a sensation of sinking or hollowness than actual pain. As its name implies, hunger-pain comes on some hours after food and is relieved at any rate temporarily by taking food, drink or an alkaline mixture. Whether hunger-pain is associated with a duodenal ulcer or not, it is aggravated by worry, anxiety, fatigue and cold, and often relieved by relaxation and holidays. Hunger-pain though most commonly encountered in patients with a duodenal ulcer, also occurs in biliary dyspepsias. Sometimes it appears to be dependent on over-smoking, and disappears on giving up tobacco. Hunger-pain is probably produced by excessive peristaltic activity in the pyloric end of the stomach and some degree of pylorospasm. The actual pain is due to an increase in muscle tension. The taking of food produces a relaxation of the muscle, and thereby relieves the symptoms. Alkalies relax the pyloric and cardiac sphincters, and thus reduce the intragastric tension.

A complaint of hunger-pain, particularly if it continues for some time or recurs at intervals, always justifies a thorough investigation with X-rays, test meal and a cholecystogram. No case of dyspepsia in which hunger-pain is a feature should be regarded as functional in origin until every effort has been made to exclude organic disease such as a duodenal ulcer. A careful physical examination in such cases may reveal tenderness over the gall-bladder or appendix, but it is important to remember that differentiation between gall-bladder and duodenal tenderness may be difficult.

In recent years the importance of gastritis as a cause of dyspeptic symptoms has come to be more widely recognised. Many cases diagnosed in the past as nervous dyspepsia are now thought to be due to a chronic gastritis. This condition may arise from dietetic errors such as unduly rich or large meals or meals taken irregularly or too hastily. Alcohol is also an important factor in the production of gastritis. The dyspepsia so often

encountered in young women is often a result of the cocktail habit. Oral sepsis, particularly pyorrhœa, may produce gastritis. With severe pyorrhœa large amounts of pus are expressed from the gums at each meal and infect the gastric mucuous membrane. In chronic naso-pharyngeal catarrh a similar state of affairs may occur as infected mucus is swallowed. Excessive smoking is also an important factor.

Although acute gastritis due to food infection as a rule clears up completely in a few hours or days, this is not invariably the case, and sometimes a chronic and somewhat intractable gastritis may be a sequel of an acute infection. Practically all acute febrile illnesses are accompanied by an acute gastritis, which disappears as convalescence is established, but in some chronic infections, particularly pulmonary tuberculosis, a chronic gastritis may occur.

In most cases of chronic gastritis a test-meal shows a low gastric acidity, or sometimes a complete absence of free acid. There is also a striking increase in the amount of mucus present. The gastric mucous membrane is still capable of secreting acid, as even when there is achlorhydria, if an injection of histamine is given acid is usually secreted. Moreover, if the gastritis is cured or improved by treatment, acid may reappear in the gastric juice. Although in chronic gastritis the secretion of hydrochloric acid is interfered with, it is not true to say that a low or absent secretion of acid necessarily indicates the presence of gastritis. Even complete achlorhydria may be found in persons with a perfect digestion and no evidence of any dyspeptic condition, but it is possible that a very low or absent gastric acidity may predispose to the development of gastritis.

At the present time there is a tendency to discourage the employment of the term "nervous dyspepsia" as a diagnosis. While it is true that such a diagnosis should be made with caution and only after a full consideration of the facts in each individual case, I feel that there are a large number of patients in whom dyspeptic symptoms can be explained on the basis of abnormal emotional states. Gastric and intestinal motility depend on the proper functioning of a delicate nervous mechanism, and the same is true of the secretion of the digestive juices. Any factors which upset the nervous mechanism may produce symptoms referred to the gastro-intestinal tract. So common a phrase as "sick with fear" illustrates the familiar fact that fear or anxiety may produce a sensation of nausea or even actual vomiting. Similarly, emotions such as grief or acute anxiety commonly produce anorexia or nausea. Emotion may also disorganise the normal functioning of the intestine or bladder. Many of us can remember a tendency to diarrhœa or frequency of micturition as a result of even such minor upsets as a *viva-voce* examination. While it is true that in most normal persons gastro-intestinal upsets due to emotions such as fear, grief, excitement or anxiety are of comparatively brief duration, there is certainly a well-defined group of patients in whom these factors produce a more lasting effect.

Nervous dyspepsia is one of the most common manifestations of an anxiety state. Often in addition to gastro-intestinal symptoms there may be other complaints, such as palpitation, headaches, lassitude, lack of powers of concentration and insomnia. The symptoms are very variable both in duration and severity. Perhaps the most frequent complaint is flatulence and distension occurring soon after meals. Pain is unusual, though the patient often complains of abdominal discomfort and a sensation of weight in the epigastrium. Loss of appetite and sometimes nausea are frequent, but, unlike these symptoms in chronic gastritis, they are not specially prominent in the early morning. The anxiety element is usually very obvious, and the patient may have already made up his mind that he has cancer. Often, however, he is not prepared to admit his fears to the doctor lest he should be thought to be neurotic. In such cases a thorough physical examination, followed by a barium meal, may often effect a remarkable cure.

Probably in all anxiety states the receptivity of the nervous system is increased and patients in this condition become aware of peristaltic movements in stomach and intestine, which in normal persons do not produce any sensations. In addition, owing to the disordered nervous system, there is increased and abnormally vigorous peristalsis, often with considerable aerophagy. Sometimes the condition is aggravated by a great increase in the number of cigarettes smoked, or perhaps by the taking of excessive amounts of alcohol.

A knowledge of the patient's circumstances and environment is of great value. Financial and business worries leading to overwork and exhaustion are potent factors in the production of digestive upsets. The same is true, and even more so, in the case of domestic unhappiness. Marital infelicity, broken-off engagements, unfaithfulness of husband or wife, aged and crochety parents, illness or deaths of children or loved ones are among the more frequent causes of anxiety states, in which nervous dyspepsia may be the most prominent feature. Perpetual quarrels at meals, so common among ill-assorted couples, are particularly detrimental to the digestion. Alvarez

in his stimulating book on " Nervous Indigestion " quotes the very true words from the seventeenth chapter of Proverbs : " Better is a dry morsel and quietness therewith than a house full of feasting with strife."

It must not be forgotten that patients with nervous dyspepsia are liable, especially if the condition is of long duration, to develop an organic lesion, particularly a duodenal ulcer. This is specially likely if the patient is of the type who has a rather small hyperactive stomach and a raised gastric acidity. Whenever a patient with dyspeptic symptoms thought to be of nervous origin fails to react to treatment a full investigation should be insisted upon, including an X-ray examination, a test meal and examination of fæcal specimens for occult blood. If these are all negative they provide additional reassurance not only to the patient but to his medical adviser.

The first essential in the treatment of a patient with nervous dyspepsia is to acquire his confidence. On no account should it be suggested that his symptoms are imaginary or exaggerated. In dealing with educated and intelligent patients it is well to stress the fact that the normal movements of the stomach and intestine and also the secretion of the digestive juices are all dependent on an adequate nervous control. When the central nervous system is in a state of increased excitability as a result of anxiety, emotion or overwork and stress this must react on the nervous mechanism controlling digestion. If aerophagy is troublesome, as is so often the case, the mechanism by which it occurs can be explained, and the patient is instructed how to avoid swallowing air by restraining his attempts at eructation and keeping his mouth open after meals with a cork. If the dyspepsia is being aggravated by incorrect habits of feeding or by dental sepsis steps should be taken to readjust the patient's routine, and he should be made to consult his dental surgeon. Sometimes the patient may already be taking unnecessary purgatives under the impression that they will " clear his system " or " stimulate his liver." If this is so he should be advised to avoid purgative drugs and take small doses of paraffin or petrolagar, if necessary.

Dyspepsia associated with constipation occurs frequently among young women who work in offices. It is often due to getting up late, a hastily swallowed breakfast, and a rush to the station. There is no time for defæcation, and as a result chronic constipation develops, which is relieved periodically by a powerful purgative.

In most cases of nervous dyspepsia, reassurance and explanation, combined with rest and a holiday, are of greater value than dieting and drugs. Very often the patient may already have limited the diet to a totally unnecessary degree, and if this is discontinued and a plain, ordinary diet instituted, there will be an improvement in the general health. Sometimes patients benefit by taking rather small dry meals and by avoiding large amounts of liquids at meals. Excessive consumption of tea or coffee should be forbidden. As regards drugs a bromide mixture with a little arsenic is often of value in dulling the keen edge of the patient's anxieties. Although nervous dyspepsia is by no means always associated with a high gastric acidity, alkaline mixtures are often effective in alleviating the symptoms. Magnesia emulsion with the addition of 5 minims of tincture of belladonna is worth a trial. The belladonna probably renders peristalsis less vigorous and prevents pylorospasm.

Nervous dyspepsia is an extremely common condition, probably considerably more common than duodenal ulcer or cholecystitis. I have looked through the index of my case notes over a period of three years and I find that, taking all cases diagnosed as duodenal ulcer, cholecystitis and nervous dyspepsia, the latter diagnosis is the most frequent.

In patients suffering from anxiety neuroses a vicious circle is often established. Dyspeptic symptoms arise as a result of their anxieties, and the digestive disturbance produces still further anxiety. Unfortunately the difficulties, environmental, domestic or financial, which induce the original anxiety state, are usually outside the control of the medical attendant, but it is often possible to alleviate the condition by eradicating from the patient's mind the idea that he is suffering from some serious organic ailment.

During the past twenty-five years, largely under the influence of the teaching of Lord Moynihan, the diagnosis of chronic appendicitis or appendicular dyspepsia has become a popular one. The alleged symptoms of this condition are attacks of pain in the epigastric region, which are less regular in their time of onset than in duodenal ulcer. The pain may radiate towards the right iliac fossa, and is not often relieved by alkalies. On examination there is localised tenderness over the appendix, even when the patient is not actually in pain. Nausea and anorexia are also frequent symptoms, but vomiting is unusual. Sometimes pressure over the appendix region may produce pain in the epigastrium. Without wishing to deny the existence of a reflex dyspepsia due to chronic appendicitis, I cannot help feeling that the diagnosis is one that is often made on insufficient grounds. Deep palpation in the right iliac fossa in sensitive or nervous subjects not infrequently produces discomfort and pain, and without further

evidence this sign should not be taken as justifying a diagnosis of chronic appendicitis. Fortunately, at the present time it is becoming more widely realised that any abdominal operation may have serious after-effects, and surgeons are more hesitant about performing laparotomies than in the past. Before appendicectomy is decided upon a thorough investigation should be carried out to exclude organic disease such as peptic ulcer or disease of the gall-bladder. The mental attitude of the patient is also most important, as operation in a patient suffering from nervous dyspepsia invariably aggravates the symptoms. All of us must be only too familiar with those distressing patients where the appendix has been removed for vague digestive symptoms and who return within a few months with symptoms similar to those complained of before the operation. Only too often such recurrent symptoms are attributed to adhesions and further operations are performed, with even more disappointing results.

Before appendicectomy is decided on in any patient who has not had undoubted attacks of appendicitis the appendix must, if possible, be visualised with a barium meal. Palpation under the fluorescent screen should demonstrate that the tenderness is genuinely localised to the appendix. Unfortunately, its lumen is sometimes occluded, and the appendix fails to canalise. This is specially apt to occur in an appendix which has been the site of an attack of inflammation. If the appendix is successfully visualised and is tender on palpation the tender area moves if the cæcum is manipulated into another position.

Inflation of the colon by pumping air through the anal canal is said to cause pain in the right iliac fossa if chronic appendicitis is present. This procedure is known as Bastedo's test. Unfortunately, the distension is apt to cause generalised pain and discomfort, and I doubt whether the test is really of much value in the diagnosis of chronic appendicitis.

With increasing experience of the unsatisfactory results of operation for appendicular dyspepsia, I have become more and more averse to advising appendicectomy unless there is evidence of acute attacks. Only too often the patient has decided for himself—or more often for herself—that appendicitis is the cause of the symptoms, and is anxious for operation. On no account should the patient's obvious inclinations be allowed to affect the issue, nor should reports from radiologists be taken too seriously. Appendices which are perfectly healthy may be abnormally long, short or kinked, or they may lie in varying directions.

Biliary dyspepsia is probably more frequently encountered than any other form of digestive upset, if we exclude nervous dyspepsia. Occurring as it does so frequently in females of middle age, it is often regarded as nervous in origin, until eventually an attack of typical biliary colic calls attention to the gall-bladder. Graham has shown that in a large group of organic abdominal conditions cholecystitis, with or without stones, was twice as common as duodenal ulcer. Although biliary dyspepsia is widely recognised, the symptoms and signs which point to this diagnosis may be recapitulated.

As I have already said, flatulence and distension are the most constant symptoms, and may have been present for years before any acute attacks of colic occur. Nausea is also a frequent complaint, coming on in sudden attacks of fairly short duration. Minor attacks of pain occur, quite apart from true biliary colic. This pain is usually referred to the right costal margin, the angle of the right scapula, or sometimes the interscapular region. On clinical examination there is often definite tenderness over the gall-bladder region, which is particularly obvious when the patient takes a deep breath while the palpating fingers are pressed under the costal margin. This is known as Murphy's sign. The downward movement of the liver brings the inflamed gall-bladder into contact with the fingers of the observer, and the patient gets a sudden stab of pain and "catches his breath." The tenderness over the gall-bladder is not, however, always present, and during the remissions of symptoms which often occur it may disappear completely, even though the gall-bladder be full of stones.

Unfortunately, gall-stones are rarely opaque to X-rays, but the technique of visualisation of the gall-bladder has improved to such an extent in recent years that such X-ray examinations have become valuable confirmatory evidence of pathological conditions in the gall-bladder. The presence of a visible shadow indicates that the mucous membrane of the gall-bladder has not lost its power of concentrating the bile. This does not, however, necessarily mean that the organ is normal. Sometimes gall-bladders which contain stones may give quite a good shadow, though the stones, being less opaque than the dye, may show as filling defects. From a cholecystographic point of view a failure to produce any visualisation usually indicates that the gall-bladder is diseased, as its power of concentrating the bile is lost.

Examination of the bile withdrawn by duodenal tube after the injection of concentrated magnesium sulphate into the duodenum may sometimes confirm the presence of cholecystitis. The aspirated bile is examined microscopically, and may show pus cells in considerable numbers. On

cultivation, micro-organisms may be found, especially strains of bacillus coli. Sometimes there are large numbers of cholesterin crystals in the bile, which are thought to point to the presence of stones. As there may be some similarity between the symptoms of cholecystitis and duodenal ulcer, a barium meal and test-meal are usually advisable. The reaction to treatment is of value. Most patients with duodenal ulcers obtain rapid relief of symptoms if they are put on strict medical treatment for ulcer. With cholecystitis or gall-stones treatment with alkalies is usually ineffective.

There are other rarer forms of dyspepsia which must be mentioned. One of these is the reflex dyspepsia which occasionally results from the presence of an epigastric hernia. The symptoms are variable and may suggest those of duodenal ulcer or gall-bladder disease. If the linea alba between the umbilicus and the xiphisternum is examined, a small tender lump can be felt, which is a protrusion of extraperitoneal fat through a small opening in the linea alba. Epigastric hernias are fairly common, but relatively few of them produce dyspeptic symptoms. It is therefore important before making such a diagnosis to exclude other causes of dyspepsia.

Another type of dyspepsia has been described by Hurst and Knott under the title of " intestinal carbohydrate dyspepsia." Though not widely recognised, it is not infrequently encountered. The chief symptoms of intestinal carbohydrate dyspepsia are discomfort and a feeling of fulness in the lower abdomen, which is produced by distension of the colon with carbon dioxide. This gas is formed by the fermentation of imperfectly digested starch granules. Normally starch is digested in the upper portion of the small intestine, but if the starch-splitting secretions are deficient a certain amount of imperfectly digested starch reaches the large intestine, where it undergoes fermentation when acted on by the bacteria of the colon. The result is distension of the colon, which is aggravated when the patient takes starchy food in excess. In addition to the carbon dioxide which results from the fermentative process, organic acids are produced which irritate the colon and may cause diarrhœa. The colonic distension in these patients is usually worst at night, and may interfere with sleep. The gaseous distension of the colon may produce spasm, and the patient then complains not only of distension but actual pain. If flatus can be passed the distension is relieved, but sometimes the gas becomes loculated in the flexures and is difficult to expel. Examination of a fæcal specimen from a patient with this condition shows the presence of starch grains, which stain black with 10 per cent. iodine in alcohol.

Patients with intestinal carbohydrate dyspepsia rapidly improve if all root vegetables, particularly potatoes, and rice are excluded from the diet. In these foods the starch is encapsulated in cellulose envelopes, which render their digestion more difficult than the free starch of flour and bread. It is therefore unnecessary to exclude the latter from the diet. In addition to dietetic restrictions, it is well to order some vegetable diastase tablets, which should be taken immediately after meals. The diastase helps to replace the deficient secretion of the intestine. These measures much diminish the formation of gas in the colon, but in severe cases a tablespoonful of powdered charcoal can be given in water night and morning. The charcoal helps to absorb any gas that may be formed.

Intestinal carbohydrate dyspepsia is often mis-diagnosed as colitis and treated with vaccines prepared from fæcal organisms or by colon wash-outs, both of which are of no value. Pancreatic extracts are less effective than diastase, as there is usually no interference with the production of trypsin, which is the chief ferment in pancreatic extract.

Much of what I have said has been concerning those cases of dyspepsia in which we can demonstrate no obvious organic lesion. But even where there is an obvious cause for the patient's digestive symptoms, whether it be a peptic ulcer or an inflammation of the gall-bladder, we must not overlook the fact that it is not only the disease, but the man or woman who needs to be treated. The manifestations of organic as well as of functional disease are largely dependent upon the patient's attitude of mind, his anxieties and his environment. Before I close I should like to quote the words written shortly before his death from cancer of the stomach by that most brilliant of American physicians, Francis Peabody :—

" Everybody, sick or well, is affected in one way or another, consciously or subconsciously, by the material and spiritual forces that bear on his life, and especially to the sick such forces may act as powerful stimulants or depressants. When the general practitioner goes into the home of a patient, he may know the whole background of the family life from past experience ; but even when he comes as a stranger he has every opportunity to find out what manner of man his patient is, and what kind of circumstances make his life. He gets a hint of financial anxiety or of domestic incompatibility ; he may find himself confronted by a querulous, exacting, self-centred patient, or by a gentle invalid overawed by a dominating

family; and as he appreciates how these circumstances are reacting on the patient, he dispenses sympathy, encouragement or discipline. What is spoken of as a 'clinical picture' is not just a photograph of a man sick in bed; it is an impressionistic painting of the patient surrounded by his home, his work, his relations, his friends, his joys, sorrows, hopes and fears."

The Disorders of Bone Metabolism

A Paper read before a Joint Meeting of the Physical and Physiological Societies of Guy's Hospital, on 31st January, 1935, by J. H. Mayer, Esq.

MR. CHAIRMAN and GENTLEMEN,—The study of the various disorders of bone metabolism, which were until recently so difficult to correlate, has been much simplified by recent demonstrations of the fundamental processes occurring during bone formation.

It is laid down by Leriche and Policard that bone formation is dependent only upon the following three factors: Firstly, an ossifiable medium; secondly, an adequate supply of calcium; and thirdly, a sufficient blood supply. Whenever these conditions are satisfied, bone will be formed, and, conversely, bone cannot be formed in the absence of any one of these factors.

The primitive mesenchyme of the embryo may develop into fibrous tissue, cartilage or bone, and the cells of all these tissues are essentially the same; further, any one of these tissues is convertible into one of the others, but only after preliminary de-differentiation to the state of primitive mesenchyme. The cells of the new tissue are the same cells which were previously incorporated in the old tissue; thus bone cells become merely imprisoned fibroblasts, and osteoblasts are to be regarded simply as fibroblasts enlarged because of functional activity.

In this way we see that any mesenchymal tissue may become the seat of bone formation, provided the following requirements are satisfied: Firstly, the tissue must be de-differentiated to the state of primitive mesenchyme; secondly, there must be an adequate supply of calcium available; and thirdly, the tissue must become adequately vascularised. Into the intercellular spaces of the mesenchyme there first occurs an infiltration with fluid, in which a multiplication of the intercellular fibrils takes place, and later the deposition of a highly refractile homogeneous substance. This refractile material is called pre-osseous substance, and in it calcium becomes deposited. Blood-vessels then invade the calcified tissue, bringing with them further mesenchymal cells, and the calcified tissue thus becomes organised and converted into mature bone. According to Leriche and Policard, the formation of pre-osseous substance and the deposition of calcium in it depend only on local adjustments of the circulation, although clearly the supplies of calcium and phosphorus reaching the tissue by the blood stream are also of importance. The effects of alterations in the blood supply are of fundamental importance in tracing the process of calcification. Hyperæmia always leads to decalcification, and diminution of the blood supply always leads to increased calcification. Greig goes further and states that decalcification of bone is always the result of hyperæmia, and that sclerosis is always due to diminished blood supply.

Another factor which is probably of importance in the process of calcification is the enzyme phosphatase, for, as shown by Robison, this substance is present in very high concentration in fœtal bones and at the epiphyseal lines in growing bones, and in lower concentration in adult bones, but absent altogether from non-calcifying cartilage; it has also been found by Huggins in high concentration in tissues the site of pathological ossification. This enzyme is apparently secreted by the mesenchymal cells of the tissue, and acts by hydrolysing the phosphoric ester in the blood, liberating inorganic phosphate and so producing a local increase in phosphorus ions. According to Robison's hypothesis, the solubility product of tertiary calcium phosphate is thereby exceeded, and deposition of this salt therefore occurs in the tissue. This reaction is reversible, and, when conditions are suitable, phosphatase can resynthesise phosphoric ester, tertiary calcium phosphate being withdrawn from the bones in the process. The direction in which the reaction goes is probably dependent, to some extent at any rate, on the hydrogen ion concentration of the tissue fluids. This is indicated by the experimental findings of Robison and Kay, who found that, *in vitro*, the activity of phosphatase in hydrolysing the ester was maximal when the reaction was definitely on the alkaline side of neutral, at pH 9; again, Martland, working on the phosphatase present in blood corpuscles, found that its activity in hydrolysing phosphoric ester was increased by a tendency to acidity, and decreased as the reaction became more alkaline, till the process was reversed and the ester was resynthesised, when the pH rose above 7.35. These two experiments have thus

produced somewhat conflicting results as to the exact relationship of phosphatase activity to hydrogen ion concentration, but that some such relationship does exist seems clear. It seems likely that phosphatase activity depends on hydrogen ion concentration, and that hydrogen ion concentration is itself regulated by changes in the blood supply, for it is well known that alterations in the vascularity of any tissue rapidly lead to changes in its hydrogen ion concentration. Thus the importance of changes of blood supply in producing decalcication or sclerosis of bone may well lie in their effect on phosphatase activity.

It may seem curious that while a tissue can only become calcified while its blood supply is poor, it can only be converted into bone when the blood supply becomes adequate. But it must be remembered that calcification occurs by a process of diffusion through the interstices of the very poorly vascularised tissue, which will not be converted into bone until invasion by vascular granulation tissue occurs.

Not only may normal bone formation be accounted for by these processes, but calcification and ossification in situations entirely separate from the skeleton are also explained. It is probable that some cases of pathological calcification are due to increased calcium content of the blood, such as that occurring in hyperparathyroidism and in hypervitaminosis D, but in most instances it occurs with normal blood calcium in mesenchymal tissues whose blood supply is very poor, usually as a result of inflammatory or traumatic scarring; a familiar instance of this is calcification in old tuberculous lesions in lymph glands, and other instances of the same process are occasionally seen in uterine fibroids, abdominal scars, and in the muscles in the early stages of generalised myositis ossificans. The calcification which frequently occurs in atheromatous plaques in the blood vessels is probably explained by a different process which need not be detailed here, but in none of these instances of pathological calcification will true bone-formation occur until the blood supply becomes adequate and the calcified tissue is invaded by granulation tissue. Probably the stimulus for this vascular invasion consists of irritation or mild inflammation.

It is of interest to note that, while the theory of Leriche and Policard was not published until 1926, many of the factors discussed in their paper, including a description of pre-osseous substance, and the discovery of the fact that fibroblasts, when they become incorporated in the process of bone formation, assume the functions of osteoblasts, were described as early as 1917, in relation to an ossifying tumour of the skin, by Professor Nicholson.

From what has been said it will be clear that bone metabolism appears to depend upon the following factors :—

1. Calcium and phosphorus metabolism, regulated by vitamin D and phosphatase.
2. Endocrine secretions, which play a part in regulating the mineral balance, and possibly also in controlling the blood supply to the bone.
3. The blood supply to the bone, possibly acting by producing changes in phosphatase activity. And—
4. The cellular elements of the bone.

I shall attempt to deal briefly with the various disorders of bone metabolism under these four headings. Clearly, in the present state of our knowledge, such a classification must necessarily be both inaccurate and incomplete, but I hope it will prove a useful method of approaching our complicated subject from an ætiological standpoint.

Rickets, contrary to popular opinion, is not due solely to deficiency of vitamin D. Shortly after the discovery of antirachitic substances by Mellanby, it was shown by McCollum and others that so long as the ratio of calcium to phosphorus in the diet of rats was kept at an optimum level, rickets did not develop, even in the complete absence of antirachitic substances from the diet. But alteration of the calcium-phosphorus ratio plus deficiency of vitamin D rapidly led to rickets. Thus two types of rickets were produced, by decreasing the proportion of either calcium or phosphorus in the diet. The same factors almost certainly apply in the case of human rickets, which is, in the vast majority of cases, of the low-phosphorus type, with blood calcium little reduced, but blood phosphorus reduced from the normal figure of 5 mgm. per cent. to 3, 2, or even 1 mgm. per cent. The failure of calcification here is apparently due to paucity of phosphate ions in the bones, without which calcium cannot be deposited. Thus it is clear that in treating rickets, not only is an adequate supply of vitamin D essential, but equally important is an adequate supply of both calcium and phosphorus in the diet.

Another factor which may be of importance in the production of rickets is the fact, discovered by Mellanby, that cereals, and especially oatmeal, when included in the diet cause a special liability to rickets, though their consumption is not essential to the production of the disease. Apparently a substance contained in these foods, named "toxamin," exerts a special rachetogenic influence, possibly by still further interrupting the absorption of calcium and phosphorus.

A rather similar disease is osteomalacia; this condition is almost confined to pregnant and

lactating women, although apparently authentic cases have occasionally been described in girls at puberty, and in men and boys. All the bones become decalcified, and the softening which follows often results in bending and the appearance of gross deformities. The blood calcium is reduced, sometimes to 5 mgm. per cent., instead of the normal 9 to 10 mgm. per cent., and the blood phosphorus is also greatly reduced, usually to 2 or 3 mgm. per cent. McCrudden has shown by analysis of the bones that their calcium content is little over half the normal figure. As might be expected in view of the low blood calcium, tetany is a common accompaniment of the disease. Vitamin D therapy, combined with a diet containing adequate calcium and phosphorus, rapidly leads to restoration of the normal blood chemistry; the bones become recalcified, but naturally the deformities produced by gravity and muscular action on the bones in their softened state are permanent. There can be little doubt that the disease is due to relative deficiency of calcium, phosphorus and vitamin D in the diet, combined in the usual type of case with the additional calls on these substances entailed by pregnancy and lactation. The geographical distribution of the disease lends support to this theory, for the incidence is specially high in Northern India and Northern China, where the staple diet is notably deficient in fats and mineral contents, and where religious conventions and climatic conditions preclude exposure to the sun.

Babies born of osteomalacic mothers are especially liable to rickets in early life, and Maxwell claims to have found genuine rickets in new-born infants of osteomalacic mothers. Most cases of ante-natal rickets, so-called, are, however, actually cases of achondroplasia, fragilitas ossium or cretinism.

Another condition either identical with or very closely related to osteomalacia is the hunger osteopathy which was rife among the civilian population of Central Europe during the latter years of the Great War. The diet of these people was markedly deficient and unbalanced, and there was a coincident increase in the frequency and severity of both rickets and osteomalacia. A curious feature of the hunger osteopathy was its age and sex incidence; the chief sufferers were the elderly of both sexes, and practically all the remaining cases occurred in adolescents between 14 and 20 years of age; in this latter age group, males were much more frequently affected than females, while those outside these two age groups were practically immune. Cod liver oil was found to be a specific remedy, and, whatever may be the explanation of the age and sex incidence, this is clearly another condition due to deficiency of essential factors in the diet. Circumstances would not permit the investigation of the blood chemistry, but it seems likely that these would have shown similar changes to those occurring in osteomalacia.

An upset of calcium and phosphorus metabolism probably also accounts for the bone changes seen occasionally following cœliac disease. The abnormalities which may be seen in the bones include the following: generalised decalcification and great liability to spontaneous fractures, delay in the appearance of centres of ossification, and changes in the metaphysis similar to those occurring in rickets. The blood calcium, and sometimes also the blood phosphorus, is low. It was shown by Parsons, in 1927, that the bone condition is completely curable by ultra-violet light or irradiated ergosterol, and it seems clear that the condition is due to deficient absorption of fats from the alimentary canal, with the fat-soluble vitamins they contain; deficient absorption of calcium and phosphorus may also play a part.

The association of bony deformities with renal disease was first appreciated by Fletcher in 1911 and Barber in 1913, and the condition in which this occurs is now known as renal dwarfism. The renal disorder consists in most cases of chronic interstitial nephritis, but other conditions have occasionally been found, including congenital polycystic kidneys, renal neoplasms and renal calculi; recent case reports indicate that the urinary disturbance may also be due in some cases to a dilatation of the bladder and ureters, apparently resulting from disorders of the neuromuscular mechanism of the bladder, or to an organic obstruction in the urethra with consequent hypertrophy of the bladder, dilatation of the ureters, and atrophy of the kidneys.

The bony changes usually appear in the latter years of childhood, and may consist of generalised rarefaction, stunting of growth, delayed union of epiphyses, or changes identical with those of rickets. The blood shows a high urea content and high phosphorus, while the blood calcium falls as the phosphorus rises; hence the high incidence of tetany in this disease. Kay has demonstrated a high plasma phosphatase content, and polyuria and albuminuria are constant features.

The condition is not due to any lack of vitamin D, but apparently results from a disturbance of endogenous metabolism of phosphorus and calcium consequent upon the renal disorder. From the work of Parsons and others it appears that the sequence of events is somewhat as follows: There is first a failure of renal excretion of phosphate, which thus tends to accumulate in the blood

This excessive phosphate combines with all the available calcium, and calcium is mobilised from the bones to maintain the normal blood content of ionic calcium. Much of the excess of phosphate is excreted by the intestine, in combination with calcium derived from either the blood or the food or both, in the form of insoluble tertiary calcium phosphate. Thus there is a constant drain on the calcium available in both the bones and the food, as a result of which the characteristic bony deformities appear. Other factors to which great importance is attached by some workers are calcium deprivation, and upsets in the acid-base balance of the body, but more detailed study of the numerous theories as to the precise cause of the condition is impossible in a paper such as this.

The condition of hypervitaminosis D may be produced easily in animals, and is said by Mellanby to occur not infrequently in marasmic infants and children who are being given potent vitamin D preparations, but insufficient quantities of milk and other foods. The condition is characterised by generalised decalcification of the bones, resulting from mobilisation of calcium and phosphorus under the influence of the excessive vitamin D. Blood calcium and blood phosphorus are both raised, and calcification in blood vessels and the formation of renal calculi are not infrequently found as a result of the hypercalcæmia.

The conditions so far discussed are apparently all due to upsets of calcium and phosphorus metabolism. When we come to consider the ductless glands exerting an influence on bone metabolism, the parathyroids appear to be of greatest importance.

It is now well recognised that generalised osteitis fibrosa, first described by von Recklinghausen, is associated with hyperparathyroidism; in most of the cases described the excessive parathyroid secretion has resulted from an adenoma of one of the glands, but in some instances an ill-defined hyperplasia of one or more of the parathyroids has been demonstrated. The condition is entirely distinct from localised osteitis fibrosa, in which one or more bones may be affected, but in which there is none of the generalised decalcification, alteration of the blood chemistry or general metabolic upset characteristic of the generalised form.

The most important feature of generalised osteitis fibrosa, in addition to the parathyroid overgrowth, is a generalised decalcification of the bones, which results in softening with great liability to curvatures and fractures; sometimes the bones are soft enough to be cut readily with a knife. The bones are hyperæmic, and it may be that the excessive parathyroid secretion produces decalcification by causing this increase in the blood supply. The multiple tumours commonly found in the bones are formed of masses of osteoclasts, whose function it is to remove the remains of decalcified bone trabeculæ; the osteoclasts themselves are nothing more or less than foreign-body giant cells of reticulo-endothelial type. Thus the so-called multiple osteoclastomata, often described as characteristic of this condition, consist merely of collections of active phagocytic cells, and the multiple cysts, which also commonly occur in the bones, are produced by degenerative processes occurring in these aggregations. The decalcified bone may eventually become completely de-differentiated and reformed into fibrous tissue.

In the blood there is a marked rise of calcium content, which accounts for the great liability to pathological calcification in such sites as the lungs, kidneys, stomach and heart-muscle, but the blood phosphorus is always decreased. The urinary excretion of calcium is in most cases greatly increased, and it appears that the calcium withdrawn from the bones, under the stimulus of increased parathyroid secretion, is excreted to a large extent by the kidneys, combined with phosphate. The soluble form in which calcium phosphate is excreted in the urine (calcium hydrogen phosphate) contains a higher proportion of phosphorus to calcium than does the insoluble tertiary calcium phosphate which is being removed from the bones, and thus, accompanying the excretion of the calcium liberated from the bones, there must occur an excretion of phosphorus greater than the amount of this substance set free from its combination with calcium in the bones. The low blood phosphorus may thus be explained. The great liability to the formation of urinary calculi is also easily explained by the greatly increased amount of calcium phosphate being excreted in the urine. The plasma phosphatase is increased in the disease, but, as we shall see later, a similar change may occur in many other conditions; it is apparently associated in some way with the decalcification of the bones.

It must be remembered that parathyroid enlargement may occur in many bone diseases other than generalised osteitis fibrosa; these include rickets, osteomalacia and other conditions in which calcium and phosphorus metabolism is upset, but in these disorders the parathyroid enlargement usually affects all four glands uniformly, and is in the nature of a compensatory or reactionary hypertrophy of the glands in response to abnormal calcium and phosphorus assimilation or excretion.

Two other ductless glands appear to have an important influence on bone metabolism; they

are the thyroid and the pituitary, but in neither case can adequate reasons be offered at present for the changes observed.

Many cases of hyperthyroidism, due either to exophthalmic goitre or so-called toxic adenoma, show generalised osteoporosis. The blood calcium and blood phosphorus are normal, but increased excretion of both these elements occurs in urine and fæces, often to a very marked degree. Relief of the hyperthyroidism by iodine therapy or subtotal thyroidectomy leads to return of the calcium and phosphorus excretion to normal figures, and recalcification of the bones takes place. Similar changes may result from the experimental administration of thyroid extract. The decalcification and increased calcium and phosphorus excretion cannot be explained as resulting solely from the increased metabolic rate known to occur in hyperthyroidism, for it has been shown by Aub and others that the calcium excretion is increased out of all proportion to the rise of metabolic rate, whereas in other conditions associated with a raised basal metabolic rate of similar degree, calcium excretion remains normal. A specific effect of thyroid secretion on calcium and phosphorus metabolism must therefore be postulated, though at present the manner in which it produces the changes we know to occur is quite unexplained.

Conditions of under-activity of the thyroid are associated with converse changes. Thus in myxœdema the calcium excretion averages 40 per cent. below the normal figure, while one of the cardinal symptoms of cretinism is retarded skeletal development.

With regard to the pituitary, all that need be said is that the acidophil cells of the pars anterior appear to play an important part in the control of bone growth. Overgrowths of these acidophil cells lead to gigantism if occurring before puberty, and to acromegaly after that date, while stunting of growth is a characteristic feature of the various syndromes associated with hypopituitarism occurring before puberty.

It seems probable that Paget's disease of bone (osteitis deformans) is likewise due to some endocrine dysfunction. This is suggested by the generalised distribution of the pathological changes throughout the skeleton, and by the curious sequence of changes observed, namely, generalised decalcification and spongy new bone formation followed by recalcification and sometimes very dense sclerosis of the bones. The condition bears some resemblance to generalised osteitis fibrosa, but parathyroid enlargement has never been demonstrated, and the blood calcium and blood phosphorus are approximately normal. One fact which may have an important bearing on the nature of this disease was discovered in 1929 by Kay, namely, that the plasma phosphatase activity is constantly raised, sometimes to more than 20 times the normal. But this is by no means the only disease in which the plasma phosphatase activity is increased ; other such conditions include the following : Rickets, renal dwarfism, generalised osteitis fibrosa, secondary carcinomatosis of bones, and some cases of hyperthyroidism ; in all cases it is apparently associated with decalcification of the bones. Although the increase is usually much greater in Paget's disease than in the other conditions mentioned, it is difficult even to guess at the relationship between this fact and the ætiology of Paget's disease.

Many instances of altered calcification of the bones resulting from changes in their blood supply may be quoted. It has already been pointed out that hyperæmia always causes decalcification, and conversely that decreased blood supply always leads to increased calcification.

Hence decalcification will be seen in all cases of acute infection in or near the bone. Bones close to, but not actually involved in, the inflammatory process may become greatly decalcified purely as a result of the spreading hyperæmia around the focus of infection. Bones themselves the site of acute infections, such as osteomyelitis, show a characteristic osteoporosis due to hyperæmia. Sequestra may be formed following occlusion of vessels during the inflammatory process, and these sequestra will retain their full quota of calcium, since they are now avascular, and will consequently appear denser on X-ray than the surrounding decalcified bone.

Vascular tumours of bone, either primary or metastatic, likewise give rise to hyperæmic decalcification of the surrounding bone.

Delay in the union of fractures is determined very largely by hyperæmic decalcification. When a limb is immobilised, its muscles become inactive and wasted, and receive only a very small proportion of the blood supply of the limb compared with the large proportion they receive when actively contracting. Consequently, the bones receive a larger proportion of the blood supply than normally, and the result is often extensive decalcification, which will necessarily interfere with the proper union of the fracture. This decalcification is a direct result of disuse of the limb, and to prevent it an attempt should be made to secure as much functional activity of the limb as is compatible with the complete immobilisation of the fractured bone-ends.

But an even more potent cause of delayed union and non-union is inadequate immobilisation; according to Watson Jones this is the only factor

of importance in establishing non-union of a fracture. Normally, following a fracture, local traumatic hyperæmia first occurs; it has been suggested by Greig that this hyperæmia is produced by histamine and acetyl-choline liberated from the damaged bone cells at the site of fracture. Granulation tissue then grows in between the fragments and, with increasing fibrosis occurring in this granulation tissue, the vascularity becomes reduced and calcification occurs in it; much of the calcium for this purpose is probably derived from the damaged bone-ends themselves. The continuous mass of calcified tissue, or callus, thus formed between the fragments is eventually converted into true bone. But with repeated slight movements occurring between the fragments, the formation of a continuous mass of granulation tissue between them is prevented, and the traumatic hyperæmia is maintained. This prevents calcification of the callus, and also leads to increasing hyperæmic decalcification of the bone ends, which eventually become hollowed out and largely replaced by fibrous tissue. When finally the hyperæmia does subside, there is no continuous mass of callus which can become calcified, and sclerosis occurs across the concave bone ends. Non-union is thus established.

The two fractures in which non-union is commonest owing to the difficulty of securing complete immobilisation, namely, fractures of the carpal scaphoid (navicular) and intra-capsular fractures of the neck of the femur, are both complicated by the fact that in each case the proximal fragment is wholly dependent for its blood supply on vessels reaching it through the distal fragment. These vessels will necessarily be ruptured at the time of fracture, so that, until the fragments become joined by callus, the proximal fragment will remain avascular. Thus it will retain its normal calcium content, but its cells will die, and the whole of this mass of tissue, now comparable to a bone graft, will require to be revascularised before bony union of the fracture can be completed.

Kümmell's disease of the spine, or post-traumatic spondylitis, can also be explained by hyperæmic decalcification following trauma. The condition is characterised by collapse of one or more vertebral bodies, usually first noticed several months after a crushing injury, which may have been remarkably slight. Whether the injury causes a fracture or merely a contusion of the vertebra, the result will be a traumatic hyperæmia. The absence of immobilisation will lead to persistence of the hyperæmia, and eventually hyperæmic decalcification will become so extreme that the body of the vertebra will collapse under the body weight into a wedge-shaped form, producing the typical deformity.

Increased calcification due to reduced vascularity is seen in a wide range of cases. Thus it may occur around poorly vascularised tumours, either primary bone sarcomata or, more commonly, secondary deposits in the bones from scirrhous carcinomata such as those occurring in the prostate and breast. Again, increased calcification is a constant feature in syphilitic osteitis, where endarteritis obliterans causes a marked reduction of vascularity. Scarring and fibrosis, with impairment of blood supply, may also occur as a result of repeated small contusions; an example of this is furnished by the condition known as Kienböck's disease, or post-traumatic carpal dystrophy, in which the lunate bone of the wrist is narrowed, and shows irregular patchy areas of increased calcification. Recently it has been shown that a similar condition may affect some of the other small bones of the carpus and tarsus, and it is in all cases apparently the result of repeated minor injuries with consequent scarring and patchy ischæmic calcification.

So far, three of the four possible causes of disorders of bone metabolism, outlined earlier in this paper, have been discussed, namely, upsets of calcium and phosphorus metabolism and of vitamin D intake; dysfunction of endocrine glands; and alterations of the blood supply to the bones. The fourth factor which may be of importance consists of the cellular elements of the bone. Three disorders which have so far not been discussed in this paper may possibly be due to some upset in this cellular mechanism; they are fragilitas ossium, achondroplasia, and diaphyseal aclasis or multiple exostoses. Unfortunately, very little is known as to the ætiology of any of these three diseases, but all of them are apparently due to upsets in the process of bone development.

Fragilitas ossium is a condition in which the bones are excessively brittle, and consequently liable to be fractured by very slight trauma, or even as a result of muscular action alone. Normally, bone owes its ability to resist stresses and strains to two inherent qualities, hardness and elasticity. Hardness is due to the mineral content and, as we have already seen, in all conditions characterised by marked decalcification, softening and liability to bending of the bones occur. The elasticity of the bones, on the other hand, is dependent on their connective tissue framework, consisting of the bone cells and fibres, periosteum and endosteum. It is this elasticity which endows bone with its ability to undergo momentary bending and to spring back to its normal shape

without being fractured; only if the force of the blow is considerable will the limit of this spring movement be exceeded, and then a fracture will result. In fragilitas ossium, it is precisely this power of elastic recoil which is lacking in the bones. The bones are usually calcified normally, and indeed in one variety of the disease, described by Albers-Schönberg, calcification throughout the skeleton is above the limits of normal. Thus the bones remain hard, and are not easily bent, but lose their elasticity. Microscopically, a deficiency of bone cells has been described, and they are said to be few in number and anomalous in structure, while the bone lamellæ lack the orderly arrangement seen in normal bone. Two chief varieties of the disease are usually described: firstly, osteogenesis imperfecta, in which multiple fractures occur in utero, and during infancy if the child lives, and which does not appear to have a hereditary tendency; and, secondly, familial fragility with blue sclerotics, which is hereditary, and in which fractures do not usually occur until the second or third year of life, and then are not so numerous as in the pre-natal form. This second variety, the familial type, is usually accompanied by blueness of the sclerotics, due to their abnormal translucency, and also by excessive laxity of the ligaments and a tendency to early progressive deafness, all of which have been attributed to an underlying hereditary under-development of the mesenchyme. In both varieties the fractures unite readily, but deformity and interference with growth often occur. The liability to fractures diminishes as the child grows older, and, if puberty is reached, further fractures rarely occur. The blood chemistry shows no constant changes, and it seems justifiable to attribute both varieties of this disease to a congenital hypoplasia of the cellular elements of the bones.

Achondroplasia is a still more mysterious disorder. It always arises in utero, and is often familial. The long bones of the limbs are chiefly affected, and the stunting of growth is traceable to the disorderly fashion in which ossification at the metaphysis takes place, as seen microscopically. The epiphyses grow normally, while their fusion with the diaphyses may occur earlier or later than the normal date. Calcification of all the bones is normal, and the nature of the disease remains a complete mystery.

Lastly, we have to consider the conditions characterised by the formation of multiple exostoses, ecchondroses and enchondromata, known by a wide variety of names, but usually classed together under the heading of diaphyseal aclasis. The condition is usually hereditary, and, besides leading to enlargement of the metaphyseal regions of the bones, usually causes stunting of growth. Several bones are usually affected, and the lesions are often symmetrical. The cartilaginous tips to the exostoses, in the common form of the disease, are thought to be derived from the epiphyseal cartilage, and are in some cases actually continuous with that structure; when fusion of epiphysis with diaphysis occurs, the exostoses cease to grow, and their cartilaginous caps become ossified. The condition has been extensively studied by Keith, who believes it to be due to a failure of the process of remodelling which normally occurs in the bone as it is formed at the metaphysis, adapting it to take its place in the shaft of the bone. It seems that the disease should take its place in our classification among the disorders of bone cells, but the essential cause of the upset remains unsolved; possibly abnormalities of the periosteum and endosteum may play a part.

One group of disorders which have not received the attention they deserve in this paper consist of calcification and ossification occurring in abnormal situations. My reasons for this omission are twofold: Firstly, that these can hardly be described as disorders of bone metabolism at all; and secondly, that time will not allow me to enlarge unnecessarily a subject which already covers a very wide field. If the essential facts concerning calcification and ossification, which were enumerated in the early part of this paper, are borne in mind, the causes and significance of pathological calcification and ossification can in most cases be easily worked out.

In conclusion, I can only express the hope that, although many branches of our subject have of necessity been considered very briefly, this paper may have served to clarify rather than to confuse your ideas on the complicated subject of bone metabolism and its disorders.

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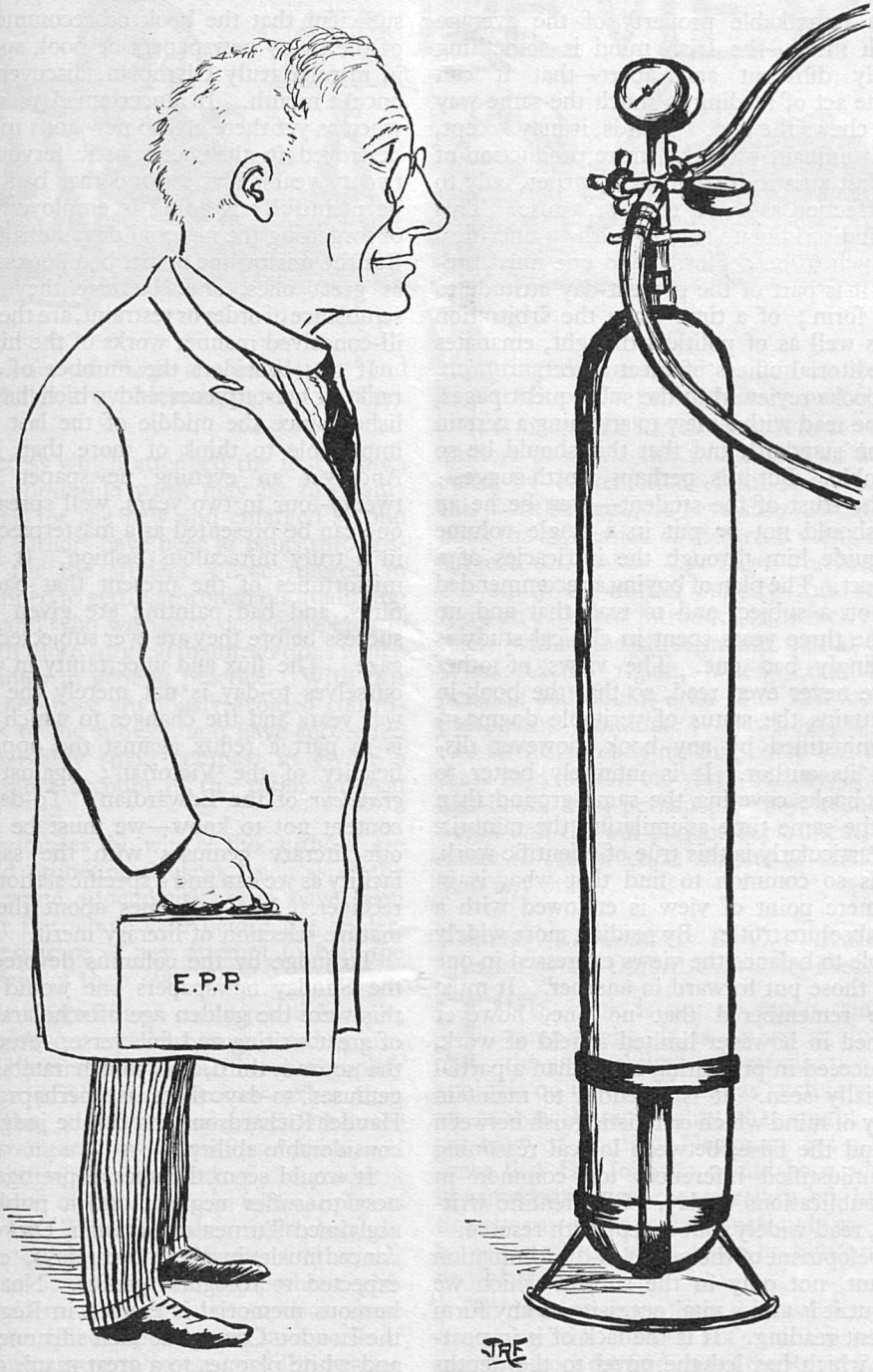

OXYGEN FOR ALL

On Reading

IT is a remarkable property of the average British mind—the Irish mind is something entirely different and apart—that it can perform the act of reading in much the same way that a cow chews the cud. That is, it may accept, in a slow, ruminant way, the entire production of a prolific, but artistically worthless, writer, only to neglect perfection as a cow eschews a rose. This wholesale indiscriminate reading with an uncritical mind is much to be deplored, and one must presume that it is part of the present-day attitude to all artistic form; of a time when the arbitration of taste, as well as of political thought, emanates from the editorial offices of Fleet Street.

Of the books reviewed in the subsequent pages, most will be read with a view to attaining a certain examination standard, and that this should be so is unavoidable. But it is, perhaps, worth suggesting that the trust of the student—even be he an *examiné*—should not be put in a single volume alone to guide him through the intricacies of a single subject. The plan of buying a recommended text-book on a subject and to read that and no other in the three years spent in clinical study is an exceedingly bad one. The views of other authors are never even read, so that the book in question attains the status of veritable dogma, a position unjustified by any book, however distinguished its author. It is infinitely better to read three books covering the same ground than to spend the same time assimilating the minutiæ of one. Particularly is this true of scientific work, where it is so common to find that what is in reality a mere point of view is endowed with a mantle of absolute truth. By reading more widely it is possible to balance the views expressed in one book with those put forward in another. It must always be remembered that no one, however distinguished in however limited a field of work, can ever succeed in presenting more than a partial truth partially seen. It is essential to maintain that faculty of mind which can distinguish between the true and the false, between logical reasoning and the unjustified inferences too common in scientific publications to-day. Of scientific writings, then, read widely, but accept with reserve.

The development of the power of discrimination is important, not only in the subject which we practise, but it is also a vital necessity to any form of intelligent reading. It is the lack of it in post-war years which has led the novel to the depths it now occupies. The pseudo-psychological dimly conceived and formlessly expressed drivel which now appears daily on the bookstalls is only the result of a demand from a public which has ceased to regard books with a critical mind. It is sufficient that the book be recommended by one of the many newspapers or book societies which, in manner truly Olympian, discover an immortal once a month. In uncertain days such as these, when as yet there are no new gods to replace those destroyed in the iconoclastic fervour of the last twenty years, it is natural that bad books should be plentiful. Reading is employed as a method of forgetting the material demands of the moment. But the misfortune is that bad books are acclaimed as great ones, and, because they may lack all semblance of order or restraint, are therefore in some ill-conceived manner works of the highest artistry.

If one considers the number of novels which rank as masterpieces and which have been published since the middle of the last century, it is impossible to think of more than half a dozen. And yet an evening newspaper can discover twenty-four in two years, well spread out so that one can be presented as a masterpiece each month in a truly miraculous fashion. It is one of the misfortunes of the present that bad books, bad films, and bad painting are given the stamp of success before they are ever subjected to the public gaze. The flux and uncertainty in which we find ourselves to-day is not merely the result of the war years and the changes to which they led, but is in part a reflux against the opprobrious artificiality of the Victorian; against the *folie de grandeur* of the Edwardian. To-day we are not content not to know—we must be able to select our literary geniuses with the same ease and facility as we can find a specific station on a wireless receiver. And so comes about the utterly premature selection of literary merit.

To judge by the columns devoted to books in the Sunday newspapers one would imagine that this were the golden age of scholarship and style, of great writing and fine verse. And yet, with all the second, third, and fourth raters acclaimed as geniuses to-day there is, perhaps, only Henry Handel Richardson who can be judged a writer of considerable ability.

It would seem the special prerogative of greatness to suffer neglect, and a public which has acclaimed Turner and Ruskin, Dickens and negro dance music in their own days, can hardly be expected to recognise genius. Not until a posthumous memorial is erected in Regent's Park, or the London County Council affix one of their blue-and-white plaques to a great man's abode, can his name be known.

Let us then read with discrimination and ignore the popular judgment. Read much, but reject much. And let us admire only what is admirable—and that is very little.

X. Y. Z.

A Short Practice of Surgery. By BAILEY and LOVE. Published by Messrs. Lewis, London. *Price* 30*s.*

THE success which attended the first edition of this admirable work may be justifiably predicted for the new and enlarged second edition. The authors have been at pains throughout to cater for the student whose interest in surgery is confined to getting through his qualifying examination, and who wishes to deal competently and surely with those surgical manifestations which he will encounter in general practice. With this end in view they have studiously avoided controversial aspects of the subject, and have succeeded within a remarkably small compass in giving a clear and succinct account of the major surgical diseases.

In those instances in which the authors are known to hold pronounced views, such as in the treatment of acute appendicitis, they have been careful to put the whole case before the reader, and there is no trace of any attempt to bias the student in favour of their own theories.

The book is written in an easily readable style, is clearly printed on excellent paper, and is embellished with illustrations which, if they exemplify the final stages of disease processes rather than those less striking manifestations which are more commonly encountered, are at least expressive, and serve to imprint upon the mind of the reader a lasting impression of the disease in its final phases of development. The work has been brought thoroughly up to date, and the chapter on thoracic surgery and the section on the sympathetic give all that the student requires to know upon these subjects. It would seem, however, in a work of this nature unnecessary to insert two illustrations of such an instrument as a Kollman's dilator, which can only be of value in the hands of the expert, whilst to say that such an instrument must never be used with a local anæsthetic for fear of rupturing the urethra is not in accord with the best traditions of genito-urinary practice.

It is becoming increasingly rare for one or two authors to tackle the whole field of surgery unaided by contributions from specialists, and in this work the authors have shown what a valuable book the expression of the broad views of a general surgeon can make. For those who are beginning the study of clinical surgery this volume will form an excellent introduction, which can be read easily within the three-month period of Surgical Ward Clerk. Again, when examinations are pending and doubts arise as to vast lacunæ in the prospective candidate's knowledge, a month or two spent in studying this book will ensure that these gaps are not too vast. Finally, of all surgical text-books this, perhaps, is most redolent of the wards and the out-patient department, and keeps closer to the practical aspects of clinical surgery than any other.

Voluntary Sterilisation. By C. P. BLACKER. Published by the Oxford University Press. *Price* 5*s.*

THIS book is not so much convincing as compelling. It is rather an inquiry into the desirability of sterilisation than an apologia on its behalf, and as such is written with an analytical impartiality that might have been the envy of Cardinal Newman, and a lucid good sense that Dr. Johnson would have admired. It is remarkable that the secretary of the Eugenics Society can express with such unbiassed restraint a review which must seem to him an incontrovertible truism.

Dr. Blacker introduces his subject by briefly reviewing the history of sterilisation in this country, from the findings of the Royal Commission for the Care and Control of the Feeble-Minded, in 1905, through those of the "Wood Committee" appointed by the Ministry of Health in 1924, to the proposals of the Eugenics Society for the

legalisation of sterilisation in 1930, and the closely identical conclusions reached by the "Brock Committee" appointed by Sir Hylton Young in 1932. He then gives a brief description of the sterilising operations for both sexes, and, while removing certain popular misconceptions with regard to these, duly stresses the fact that such operations cannot be entirely free from risk. The legal position with regard to sterilising operations is discussed, and Dr. Blacker brings us to the not unreasonable conclusion that in a court of law such operation would in all probability not be considered illegal if adequate eugenic ground were proved; it is very forcibly pointed out that the present legal uncertainty discriminates against the poor in that, since there is no certainty of legal protection, there is unwillingness among hospitals to admit patients for those sterilising operations which a surgeon could perform in private practice with all reasonable immunity from legal intervention. That is as much as to say that, owing to the legal position, the tendency is for the type of patient most in need of that operation to be the type least likely to get it.

By his analysis of the current views and statistics with regard to the incidence of hereditary defects and diseases, Dr. Blacker drives us to the conclusion that sterilisation should be adopted as a eugenic measure, and his discussion of the fertility of the "social-problem group" solidifies our certainty. We are left at this point almost with a desire for the legality of compulsory sterilisation, but our zeal is restrained by Dr. Blacker's pertinent observations on this point. He objects to compulsory sterilisation on the grounds that the diagnosis of the psychoses is often difficult and uncertain, that people may hesitate to enter voluntary institutions for the treatment of mental disorder if it is known that they may undergo compulsory sterilisation, and that such compulsion might cause a stigma to be attached to the operation as though it were "a penal weapon for punishing crime." Having thus established his case, Dr. Blacker discusses the safeguards that may be established against possible abuses, and in his final chapter reviews the objections against sterilisation that are commonly put forward.

He ends with a plea not for the extensive discharge of sterilised mental defectives from institutions, but for increased accommodation for people so deficient, in order that by a period of stabilisation and training in an institution it may be possible for them to become fit for life in the general community under guardianship or supervision. This, in his view, is the chief danger that the legalisation of voluntary sterilisation may entail, namely, that sterilisation may provide an excuse for making inadequate institutional provision for the mentally infirm. After reading this book, there will be few who will not agree that, if adequate provision be taken against this last-named possible abuse, the case for voluntary sterilisation is complete. The ethical side of the question is considered, as the book is written, from the rationalist point of view, and those who feel that their religious views have received scant consideration at Dr. Blacker's hands should remember that it is a voluntary, and not a compulsory measure that is recommended, and that the book is an analysis of facts, and not of feeling.

Health. By. E. OBERMER. Published by The Bodley Head. *Price*, 3*s*. 6*d*.

Individual Health. Vol. I. By E. OBERMER and MILTON. Published by Messrs. Chapman & Hall. *Price* 15*s*.

DR. OBERMER'S book, "Health," is a medical contribution to the "XXth Century Library." He deals with the present position of medical education and practice in this country, and follows it with a conception of a Utopian method of medicine in which prevention rather than cure plays the greater part. Admittedly the present state of medicine is not a perfect one, but we are of the opinion that constant preoccupation with the question of health and disease by the lay population would outweigh all its possible advantages by the great number of "neurotics" thereby induced. Dr. Obermer apparently is able to detect incipient "strain" in the organism by analyses of the ingesta, blood and excreta over a twenty-four hour period. These investigations—including such determinations as the blood fibrinogen—he would do on all patients, whatever their disease, and on the healthy as well. He says, "Not until there has been a concerted utilisation of such methods over a considerable period of time . . . will it be possible for the following questions to be answered . . ." Then follows a series of queries, including, "How many times a day must I go to the lavatory?" We think we can determine this well enough without complex biochemical experiments.

The second volume of Dr. Obermer's under review contains a detailed account of the exact method by which he makes his analyses, and as such contains some useful information for those who are biochemically inclined; a technique for a complete investigation of food, blood, urine and fæces being included. We cannot, however, believe that such intricate and thorough purely biochemical investigations—however useful they may be on occasions—can ever play more than a small part in the diagnosis and treatment of a sick

person who, after all, is a human being, and not simply a complicated piece of chemical apparatus which has gone wrong.

Diseases of the Heart. By COWAN and RITCHIE. Published by Messrs. Edward Arnold & Co. Third Edition. *Price* 30*s.*

THIS is the third edition of a book which has come to be regarded as a standard work on cardiology, and as such it fulfils a very worthy purpose. It is twelve years since the last edition of the book, and this lapse of years has been accompanied by many modifications in our ideas of the physiology of the heart, the importance of physical signs, and in the treatment of pathological conditions. The general layout of the chapters remains much the same as in the previous edition, but the text has been considerably altered and in many parts entirely rewritten to bring the work up to date. It is possible to divide the book into three sections: (1) Anatomy and physiology of the heart; (2) Abnormalities in rhythm; (3) Specific diseases affecting the heart, all of which are equally good.

We suppose that the use of quinidine in auricular fibrillation is one of the most controversial therapeutic problems in cardiology, and we are pleased to see that this drug is not viewed with any great enthusiasm by the authors, who go as far as to state that 60 per cent. of patients are "quinidine proof," and the majority of the remainder relapse to fibrillation, even though they take a maintenance dose of the drug. The text is easy to read, and the book as a whole is very well illustrated.

The Treatment of Rheumatism in General Practice. By W. S. C. COPEMAN. Published by Messrs. Edward Arnold & Co. *Price* 9*s.*

THE first edition of this book appeared two years ago, but was exhausted within a few months. This in itself is sufficient recommendation for the book. The prevalence of chronic rheumatic disease is so considerable and our knowledge as to its ætiology is so meagre that often we throw in the sponge and regard it almost as a visitation which cannot be combatted. The author of this work has made it his business to show practitioners how treatable rheumatism is, and how essential it is for them to grasp at any rate the principles of the treatment.

There are three aspects of the treatment which can be applied in all cases: (1) The search for foci of sepsis; (2) Rest; (3) Physical treatment. For practical purposes the difficulty is to know when to change over from one form of treatment to another. The author mentions some of the specific forms of treatment, such as gold therapy and vaccines, but mentions very little about the requisite dosage. As regards physical therapy, the author points out the value of wax baths, foam baths, diathermy, etc., as a preliminary to active and passive movements. He also includes a valuable chapter on spa treatment. He welcomes the introduction of Evipan anæsthesia for manipulation. A criticism, which we think is justifiable, is that only a small attempt has been made to compare the value of different forms of treatment, so that, for instance, it would be difficult for the practitioner to know whether he ought to try colonic lavage, protein shock, or gold or vaccines in the case of a patient who may be able to afford only one of these forms of treatment. Hospital patients and wealthy patients have the benefit of being able to try every form of treatment, which shows any likelihood at all of helping, but there are a great many patients who want the best treatment available for a limited financial outlay, and these are the ones we have to deal with in our daily rounds as practitioners.

Hygiene for Nurses. By GUY and LINKLATER. Published by Messrs. E. & S. Livingstone, Ltd. Third Edition.

THE justification for a book of this kind lies in the syllabus of the Nurses' State Examination. There have been very few alterations in the text in the present edition, and therefore the book retains its original character. It deals in an elementary fashion with the principles of feeding, infectious fevers and sewage disposal, as well as with the more general aspects of the subject such as personal hygiene, ventilation, etc. It is essentially readable, and for this reason apart from any others we feel that it fulfils its purpose.

Aids to Ophthalmology. By N. BISHOP HARMAN. Published by Messrs. Baillière, Tindall & Cox. *Price* 3*s.* 6*d.*

OPHTHALMOLOGY can be looked upon from two angles: (1) from the point of view of him who takes the subject seriously; (2) from the point of view of the student who wishes to learn a few salient facts prior to taking his final surgical examination. This book will not suit either of these groups of people, as it is quite clearly not written in such a way as to appeal to the specialist in the subject, and yet it contains too much detail, especially as regards operative procedure, to be welcomed by the student taking the ordinary surgical degrees. It contains a few diagrams, but most of them have been so badly reproduced that they could well have been omitted. It is the 8th edition of the work, but, even so, it cannot be regarded as an "aid."

Sherlock Holmes and Dr. Watson—A Medical Digression. By M. Campbell, Published by Messrs. Ash & Co., Ltd. *Price* 1*s*.

FOR those of us who delighted in Dr. Campbell's articles in the *Gazette* on Sherlock Holmes and Dr. Watson there has now been published a pamphlet in which all these articles have been incorporated. In the first the author deals with Dr. Watson's knowledge of medicine, in the second with his purview of Chemistry, Anatomy and Pharmacology, whilst in the third Dr. Watson's practice and various phases of his career are closely analysed.

Dr. Campbell has adopted that facile, almost humorous, style of dealing with serious subjects which was first popularised by the great Cambridge school of research workers and will ever be associated with the names of the late Sir Arthur Shipley-Eddington and James Jeans. Despite this almost frivolous and piquant approach, which makes the work acceptable to those who have not made a close study of the inimitable Watson, there is a wealth of material which will more than repay study by the serious student. In a bibliography which is appended one serious omission has been made in that there is no mention of Father Ronald Knox's pioneer work in Baker Street research in his " Essays in Satire."

Dr. Campbell has associated himself with the orthodox school of thought which admits of only one Watson, and here we must congratulate him. This school looks upon the Knoxian conception of a " proto Watson " who wrote the earlier stories, and a spurious " dentro Watson " who compiled the later ones with that same well-merited contempt which the true Shakespearean feels for the " Baconian." We can strongly recommend this work both to those who enjoy the Baker Street saga for the excitement and pleasure which it gives them, and to those serious students who cannot afford to be without this " medical digression " upon the shelves of their library.

Short History of Talmudic Medicine. By Dr. J. SNOWMAN. Published by Messrs. John Bale, Sons & Danielsson, Ltd. *Price* 3*s*. 6*d*.

THIS book by Dr. J. Snowman has been published at a very propitious time. That immense compilation of Jewish lore comprising the Palestinian and Babylonian Gemaras, together with the Mishnah, and known collectively as the Talmud, is now in the process of being translated into English, and will be available to the English speaking student. This work, we are told, will be published in six or seven large volumes, and the industry entailed in seeking any specific piece of information from it will be proportionately large. It is therefore very fortunate that the short work on Talmudic medicine should have condensed into a small compass all the fascinating and bizarre theories of the healing art about which those who are interested in the history of medicine delight to read.

Here we find the influence of the predominant Greek school from Hippocrates to Galen incorporated in and moulded by the spirit of Jewish ritual. It is interesting to read that the " leprosy " of the Old Testament is not what we understand by " leprosy," but probably referred to trichophytosis or psoriasis, and was applied to any " scaly " lesion of the skin. There is a chapter upon the " Status of the Physician " and an account of the methods adopted to obtain fees which might well be applicable to the twentieth century. Finally we can but admire the ingenuity and courage displayed by the Talmudic surgeon in his struggle to combine his practice of therapeutics with the restrictions of his religious code.

A Brief Outline of Modern Treatment of Fractures. By H. WALDO SPIERS. Published by Messrs. Baillière, Tindall & Cox. *Price* 9*s*.

THE book is mainly of interest in the presentation it gives of American views on the treatment of fractures. One is favourably impressed by the conservative nature of the methods advocated by Professor Spiers. Little practical detail is given, and the book is rather a very readable account of the well established methods with brief descriptions of the modes of injury and complications. In this connection the numerous line diagrams which everywhere supplement the text are particularly admirable.

On some points Professor Spiers is not in harmony with the adopted teaching in this country, and a few of the diagrams illustrate methods of treatment with which we are unfamiliar. As an instance of the first, he gives a direct blow as the commonest cause of a transverse fracture of the patella, and of the second there is a description of the Anderson method of extension in pertrochanteric fractures of the femur, in which extension is obtained by counter-thrust against the sound leg.

There is an early section in which is given a description of the various types of fracture and of the better known splints, plasters and braces. Included in this section are accounts of mal- and non-union, emergency care, bone and metal grafts, X-ray interpretations and bone technique. It is a valuable introduction to the book, and concludes with a page on medico-legal aspects of bone surgery which throws a humorous, if rather alarming light, on the hazards to which certain legal practices expose the American orthopædic surgeon.

Ophthalmology in General Practice. By O. GAYER MORGAN. Published by Messrs. John Bale, Sons & Danielsson. *Price* 2*s.* 6*d.*

THE treatment of disease of the eye is for the most part the work of the specialists. There are, however, classes of eye condition which concern the general practitioner. There is, firstly, the limited field in which the treatment will rest in his hands. Most of these cases are diseases of the anterior part of the eye—the lids, conjunctiva and cornea. Secondly, there are those ocular emergencies which demand immediate recognition and treatment if the sight of the eye is to be preserved. The treatment of these often lies in the province of the specialist, and it is rather the diagnosis of the condition in its early stages that concerns the practitioner.

The matter in this little book is presented from this point of view. While much of the sections on the conjunctiva lacrymal apparatus and cornea are devoted to treatment, it is the signs of glaucoma and its differential diagnosis which are stressed. The book will be of value to the practitioner on account of the practical nature of its contents; it can also be read with advantage by the student who wants an easily absorbable synopsis of the subject.

The British Pharmaceutical Codex, 1934. Published by the Pharmaceutical Press. *Price* 35*s.*

THIS is the fourth edition of the Pharmaceutical Codex, the previous editions having appeared in 1907, 1911 and 1923. There have been many new drugs added since the last edition, and there have been modifications in old ones, so that it has been found necessary to rewrite almost the whole text. This has entailed a tremendous amount of work, and the Pharmaceutical Society is to be congratulated on their efforts. The value of the Codex as opposed to the Official British Pharmacopæia is that it includes descriptions of drugs which are in common use, but which, by reason of their similar action to related drugs, are not included in the latter. It includes many drugs which are included in the official pharmacopæias of other countries. An enormous amount of valuable and interesting information is to be discovered in its pages, so that it can fairly be said to be worthy of a place on every medical practitioner's bookshelf, although he may not still make up his own prescriptions. It is divided into four sections :—

1. General monographs on chemical crude drugs.
2. Surgical dressings.
3. Formulary.
4. Appendices.

All the sections are up to date and the appendices cover a number of subjects from weights and measures to an exhaustive list of proprietary preparations and their approximate composition.

Toxicology (*Catechism Series*). By ANDREW ALLISON. Published by E. & S. Livingstone, Ltd. *Price* 1*s.* 6*d.*

THE subject of toxicology lends itself to question and answer more readily than any other branch of medicine, and we feel that this book, which has reached its third edition, should be of considerable help to those students who like to do a little " rapid revision " in those hectic days between writing the papers and the *viva-voce* examinations. A few of the questions might well be omitted. For instance, we hope we will never meet the examiner who will ask us, " What is nickel carbonyl ? "

Essentials of Materia Medica, Pharmacology and Therapeutics. By R. H. HICKS. Published by Messrs. J. & A. Churchill, Ltd. *Price* 12*s.* 6*d.*

THIS is a new book on a subject which most students find very difficult to grasp, largely, so we think, because of the habit of teachers of medicine to confine themselves to methods of diagnosis. This book is quite clearly written by a clinician who judges the value and importance of a drug by its clinical applications rather than by its chemical formula. The author has omitted almost entirely to describe experiments on frogs and other lesser vertebrates, for which we thank him. All the important drugs are described, and, as a rule, are introduced by some historical reference or anecdote. At the end of each chapter is a valuable short summary, which the student is advised by the author himself to read before reading the chapter.

There is only one suggestion which we wish to make, and that is that we feel that the book would be improved if there were included a few prescriptions at the end of each chapter and a more detailed account of dosages. Apart from this, this book is excellent, and is one which will be very much appreciated.

Manual of Medicine. By SIR STANLEY WOODWARK. Published by the Oxford University Press (Humphrey Milford). Fourth Edition. *Price* 15*s.*

IT is possible to write a text-book of medicine in either of two ways, which are : (1) Every disease can be described and its effect on all parts of the body noted; (2) Every anatomical system can be taken separately and the diseases associated with them described. Sir Stanley

Woodwark has chosen the latter method, and there is no doubt that many students find it the most convenient and the most suited to their tastes. The disadvantage of the method is that there are many diseases such as those whose outward manifestation is in the blood, which cannot be classified under any anatomical compartment. Who, for instance, can say that the leukæmias are diseases of the blood? and yet in this book they are classified under the anatomical heading "Diseases of the Blood," along with Pernicious Anæmia, which probably has just as little right to be classified under such a heading. We do not wish to labour this point, as it is only a small matter of principle, which the student will not worry about very much. A text-book should only be a guide to wider reading and a source of reference, in both of which respects this book is excellent. The main headings are clearly marked in capital letters, so that it is easy to look up points of discussion which may arise on ward rounds—the basis of the introduction to medicine—and the author has avoided controversial questions, which, as a rule, cannot be settled by any text-book. We recommend this as a sound text-book at a moderate price.

Manual of Diabetes. By J. J. CONYBEARE. Published by the Oxford University Press (Humphrey Milford). *Price* 6*s.*

THIS book is the natural sequel to the author's "Self-Care of the Diabetic," which has also been revised and is included as an appendix in this new volume. (It may be obtained separately for 1*s.*) This monograph makes no pretence to be a treatise on the subject of diabetes, but is intended not only as a guide for the general practitioner, but also as a help to the intelligent patient, who wants some sound information on how to control his disease. On this account the author has omitted all reference to the detailed physiology of diabetes and carbohydrate metabolism, and has included only the salient facts, which are known. He has included several specimen diets of different calory strength, and very wisely has chosen a middle course between the high carbohydrate diets, which have lately been recommended by some physicians, and the low carbohydrate diets which were recommended in the early days of insulin. The disadvantage of a high carbohydrate diet is (as Dr. Conybeare clearly points out) that it means the almost total abolition of butter, bacon and eggs, which have so many devotees in this country. There are chapters on the treatment of the various complications and emergencies, which arise as a rule during the lifetime of most diabetics. In the chapter on anæsthetics, we are sorry to see that no mention is made of the risk or otherwise of evipan and avertin, which are used so much at the present time.

This is a most excellent handbook for any practitioner, and furthermore is a valuable addition to the libraries of those who have yet to sit for their final examinations.

Self-Care of the Diabetic. By J. J. CONYBEARE. Published by the Oxford University Press (Humphrey Milford). Third Edition. *Price* 1*s.*

THIS has been revised and brought up to date. It has been included as an appendix to the Manual of Diabetes by the same author. It describes the method of testing the urine for sugar and acetone bodies, the way to inject insulin, the calory value of various foods and the significant features of hypoglycæmic and hyperglycæmic reactions. Every diabetic should have such a book to guide him, unless he wishes to remain under the continual observation of his medical attendant.

Problems of Anæsthesia in General Practice. By D. H. LUKES. Published by Messrs. Hodder & Stoughton, Ltd. *Price* 7*s.* 6*d.*

THIS book is the Sir Charles Hastings prize essay of the B.M.A. for 1934. The author is in general practice and was formerly honorary anæsthetist to a London hospital. It should prove of the greatest interest to all general practitioners, as he shows clearly and convincingly just why the methods of the anæsthetic specialist fail or have to be modified by the G.P. This is in no sense of the word a text-book. It presupposes a knowledge of the methods of administration of the drugs employed, but shows in detail their properties (both physical and pharmacological) as they affect a man who not only has to give the anæsthetic, but also has to make his own choice, tend his patient after the operation, please the relatives, and consider cost, portability, and the fact that he may only be giving occasional anæsthetics. The whole work is most carefully formulated from a large series of cases which have come under the author's own care, and there are many interesting statistics and abundant references.

Handbook of Anæsthetics. By ROSS and FAIRLIE. Published by Messrs. E. & S. Livingstone. Fourth Edition. *Price* 10*s.* 6*d.*

FOR the fourth edition of this well-known book Dr. Fairlie now assumes sole responsibility. The teaching of general principles is sound, and on these grounds this work well deserves its popularity.

It is some six years since the last edition appeared, and during that period much advance has been made, especially in specialised types of anæsthesia and the introduction of new drugs and apparatus.

The author has wisely adopted the policy of including in his book, primarily intended for students only, methods which have obtained general recognition.

As a general criticism it seems a pity that blocks have been used with no word of explanation in the text; such illustrations of complicated apparatus are of very little value—also in several instances they depict designs now obsolete.

The author gives credit to recent workers on endotracheal anæsthesia, but seems to have failed to grasp the trend of their work. He does not mention that all moden developments in this direction have been towards inhalational anæthesia rather than the older insufflation methods.

One feels from this book that Magill's method of intubation, now becoming so popular, has not received much attention in Scotland (the home of this book), as, amongst other things, it is stated that deep anæsthesia is necessary for its performance, whilst one of its great advantages is that only the lightest degree of anæsthesia is required.

The chapter on spinal analgesia also calls for comment. We cannot agree that the sitting posture is the correct position for performing lumbar puncture, save only occasionally. Also no mention is made of the Pitkin needle, which has in the view of many anæsthetists entirely superseded the original Barker type.

Beesley and Johnston's Manual of Surgical Anatomy. Revised by JOHN BRUCE and ROBERT WALMSLEY. Published by Oxford University Press (Humphrey Milford). *Price* 20*s*.

THE demand for a new edition of this manual found its original authors no longer able to accept the full responsibility for its production. They have, however, been fortunate enough to secure the services of Mr. John Bruce and Mr. Robert Walmsley, who have been jointly responsible for the work of revision. This book seems of special interest to senior students, post-graduates and those working for the Final Fellowship examination. For the last-named class one can recommend this example of an excellent surgical anatomy text-book without hesitation.

Descriptions of operations which have become obsolete have been replaced by descriptions of their modern counterparts, and this has involved the rewriting of large parts of each section of the book, especially those dealing with the head, thorax and sympathetic nervous system. This has meant that the book has increased in size, but at the same time the number of illustrations has also increased. Many figures which were once familiar in Cunningham's Text-books of Practical Anatomy can be recognised, and they take on a new importance now that they are used to illustrate points of surgery and applied anatomy.

The price of this book at 20*s*. is moderate for the large amount of excellent material which it contains.

Collected Papers of St. Mark's Hospital, London, including a History of the Hospital. Centenary Volume, 1835-1935. Published by Messrs. H. K. Lewis & Co. *Price* 30*s*.

TO commemorate the centenary of their foundation by Frederick Salmon in 1835, the staff of the St. Mark's Hospital for Diseases of the Rectum have hit upon the happy idea of gathering together into one volume all the important papers which have emanated from the institution during that period. As in the case of "The Robert Jones' Birthday Volume," this collection represents the last word in authoritative opinion upon the subjects under discussion, and, as was that volume, those who are sitting for the higher examination in surgery will find the mass of material presented to them indispensable for a proper understanding of the subject; whilst those who can indulge in a mellower study will find there old friends reprinted, and the classical papers of the past brought once more into the light of day. As is proper in such a work, the life and history of St. Mark's is traced from the modest beginning of seven beds at an establishment in Aldersgate Street to the flourishing concern which we know to-day, and along with this history of the hospital, so the history of rectal surgery itself is unfolded in the most fascinating way.

To present students of surgery the later papers will inevitably be of the greatest interest, as revealing the enormous strides which have been made in this branch during the last fifteen years, but the earlier works reveal, as always, that meticulous care of detail and shrewd observation which characterised the older school of clinicians and laid the foundations for the scientific advances of later years.

Where all are so excellent it would seem invidious to single out any for especial praise, but some of the papers more than others seem to stand out as milestones on the road of progress. Throughout the volume are scattered the thoughtful, stimulating articles of the St. Mark's pathologist, Cuthbert Dukes. He deals with the problem of intestinal polyposis and elaborates his classification of rectal

cancers. Adopting the valuable guide of prognosis, he divides his rectal growths into three categories, depending upon whether they are entirely intrarectal (Class A), have passed beyond the confines of the rectal wall (Class B), or have involved the regional lymph nodes (Class C). He shows how this scheme is a safer guide to prognosis than that of Broder, who adopts a histological classification; further, he asserts that the much dreaded colloid carcinoma is probably not such a bogey as has been thought.

It is interesting to see the respective protagonists of perineal excision and abdomino-perineal excision for carcinoma of the rectum; Lockhart Mummery and Gabriel press their claims, and a detailed description is given by each of them of the operation which they commonly perform.

On all hands we find condemnation of radium as an agency suitable for the control of cancer of the rectum, with the possible exception of epithelioma of the anus (where it may be noted only 50 per cent. of the operable cases met with success). These views are expressed as the result of experimental treatment of a large series of cases helped by grants from the Medical Research Council and of the careful and valuable work done by the follow-up department of the hospital under the guidance of Gabriel. Sir Charles Gordon Watson, in an article reprinted from the *St. Bartholomew's Hospital Journal*, has traced the history of rectal surgery from the time of the Black Prince. He tells of Henry V, who died in his 35th year from fistula, and of the famous operation upon LouisXIV for the same complaint, for which the surgeon received the noble sum of £6,000!

Lastly, praise must be accorded to that classical article by Melligan and Morgan which appeared in a recent number of the *Lancet*, dealing with the anatomy of the anal canal and the rectum, and the relation of fistula thereto. The problem of fistula has always been one which is very hard to understand, and ever harder to propound. This article has placed the subject on a sure foundation, sure because it is based upon the fundamental principles of anatomy and is born of the marriage of careful observation to reasoned deduction.

There is one more purpose which this volume might fulfil. It should be sent with respectful good wishes to the chairman of a certain House of Lords Committee which has been but recently dispersed, that he might see how progress is the sum total of individual efforts by men who proceed slowly step by step and testing each step as they go, and are not afraid to light their way by the searing torch of self-criticism.

Simple Instructions for Diabetic Patients. By DOROTHY HARE. Published by Messrs. H. K. Lewis & Co., Ltd. Second Edition. *Price* 1*s.*

THIS is a small handbook which has been prepared for the use of nurses, patients and practitioners. The instructions are rather too simple for the medical practitioner, but they will be of use to the other two categories. It is a small brochure, which has been prepared for use in the Diabetic Clinic of the Royal Free Hospital. We were interested to see that the author agrees with the general teaching at Guy's as regards the limited value of the special diabetic foods in the treatment of diabetes.

Clinical Pathology. By WILLIAM SMITH. Published by Messrs. J. & A. Churchill, Ltd. *Price* 5*s.*

THE author has written this book as a guide to practitioners in the methods for collecting pathological specimens, and has carefully avoided details of laboratory technique. It appears that as a pathologist to a large hospital he receives many specimens, which for one reason or another are rendered useless by the way they have been obtained. We were disappointed to find when reading his directions how low he estimates the intelligence of the average practitioner, and we think it unlikely that the book will have a very wide appeal.

In the general information which is included there is a host of platitudes such as the following: "Insulin must be given to many cases of diabetes mellitus"; "Patients who complain of suffering from pain after food are commonly under observation in hospitals and nursing homes." It did not require hours of diligent search to discover these pearls. Furthermore, the information on some of the tests which are in common use is inadequate. For instance, he omits any reference to the spectroscopic examination of the stools for occult blood.

There seems little to recommend this book, which covers no new ground and contains a minimum of useful information. The valuable information it does contain can be found in a host of other books.

Insomnia and Other Disturbances of Sleep. By EMANUEL MILLER. Published by Messrs John Bale, Sons & Danielsson, Ltd. *Price* 2*s.* 6*d.*

THIS small book is admirable. Dr. Miller has given a concise account of disturbances of sleep with the minimum of psychological jargon, and has thereby done what we have always thought must be possible. In doing this he has,

of necessity, said little about dreams and their interpretation, but the book suffers little by being free from sexual unlikelihoods.

Particularly good is the chapter dealing with the treatment of insomnia in children, but Dr. Miller is less convincing when tabulating ætiological factors; surely difficulties must arise in ascribing sleeplessness to either subthyroidism or constitutional vagotomia?

Insomnia in organic disease and in alcoholism is dealt with fully, and this is followed by a good chapter on drugs, but the reader is not overburdened with innumerable remedies.

Altogether this book is worth reading, and especially by those whose ideas on sleeplessness go little further than ten grains of aspirin.

Outlines of Dental Science. Vol. IV.—Dental Prosthetics. By J. DOUGLAS LOGAN and W. RUSSELL LOGAN. Published by Messrs. E. & S. Livingstone. Second Edition.

THIS book achieves its object and can be thoroughly recommended to the fourth-year student who wishes to get a grasp of the first two years of his training.

The authors in their preface state that the object of this book is to describe within the smallest space what they consider to be the principles of denture construction.

It describes simply, clearly, and in detail the steps taken in the making of dentures, from the casting of an impression to the articulation of teeth in class two cases. It also deals with repairs, but does not wholly eliminate the difficulties that may arise.

It also describes crown work, that is the making of Richmond and Dowel crowns, and follows this with a chapter describing the elementary details of bridge work. The making of stainless steel dentures and both cast and struck gold dentures is dealt with thoroughly, and the various methods of obtaining the retention with a detailed description and copious illustrations of the various types of clasps.

The book contains some fifty illustrations, many of which help one to understand the text, but some of which are quite unnecessary. Nevertheless, the book can be very strongly recommended to those students who are about to start their two years' training in the Mechanics' Laboratory.

Aids to Surgery. By CECIL JOLL and R. C. B. SEDLIE. Published by Messrs. Baillière, Tindall & Cox. *Price* 7*s.* 6*d.*

MR. CECIL JOLL has made an excellent job of the sixth edition of this work. Eleven years have passed since the last edition was brought out, and in the production of the present one the book has been completely rewritten and enlarged. Mr. H. H. Greenwood has done the diagrams, which considerably enhance the value of the work; they are everywhere clear, and a great quantity of readily absorbable information on subjects such as osteitis fibrosa is presented by means of a series of small sketches.

For purposes of revision for examinations the smaller a cram book can be, and still remain comprehensive, the better. It might be thought that "Surgery" was a subject ill suited to treatment in the "Aids" series, and certainly this book is only to be recommended for use in conjunction with some larger text. Within its limitations, however, it is excellent; it presents in a manner which can be easily and rapidly absorbed a synopsis of surgery in which the principles and a great deal of clinical material are woven together.

Some sections have necessarily suffered from lack of detail, and that on fractures is very inadequate. The book aims at being of use to practitioners as well as students, and the practical detail given in the treatment of such conditions as piles and anal fissures must be intended particularly for them. It is a work, however, which is best suited for the student for revision before exams., and for this is in every respect admirable.

Winter Night at Guy's

IN the silence of the night,
Flanked by faces drawn and white,
Nurses pass with silent heels,
Trolleys glide on rubber wheels,
Past my linen curtain.

Shadows flicker on the walls,
Tugboat on the River calls,
Patients breathe uneasy sighs,
Someone in delirium cries;
Life is short, uncertain.

Outside all is cold and damp,
As one lights one's shaded lamp,
As one tosses 'neath the clothes,
Thinking less of other's woes—
D——! my throat is hurtin'!

D. R. R. (*Bright Ward*).

Correspondence

"A Question of Fact"

To the Editor of the GAZETTE

SIR,—On this "question of fact" you say you are sorry I did not have a copy of Lloyd George's Memoirs at hand from which to quote; I am bound to take up the implied challenge.

On page 143, vol. 1, the Master-General of Ordnance during the first battle of Ypres wrote to G.H.Q. (who had been asking for shells): "I cannot say what our future supplies will be, as it entirely depends on the promise of firms, to whom we have given large orders, being kept up to date," and on page 144, "Through November and December (1914) the shortage of ammunition was growing." Clearly, the private firms could not fulfil their contracts.

But when I turn to your own quotation from the Memoirs I confess I am surprised. It was meant to prove the "astounding inability to meet the situation . . . shown by the Government War Department in the Great War." Your quotation is dated September 18th, 1915, three to four months after the founding of the Ministry of Munitions, which relieved the Government War Department of all responsibility for munitions! Therefore it cannot be very apt. After all, the explanation of Mr. Lloyd George's outburst is given in the next paragraph, where he writes: "I am afraid that the department dealing with this phase of our work is considerably overtaxed. The men in charge are exceptionably able men, but they have too much to do."

May I, in conclusion, thank you for the hospitality of your columns, and say that, in my opinion, the discussion on the Peace Ballot has been well worth while, and at times it has been illuminating?

Yours, etc.,

E. P. POULTON.

25, Upper Wimpole Street,
W.1.

Hospital Information, etc.

Notice

M.R.C.P. Examination

The attention of old Guy's men who wish to take the M.R.C.P. Examination in July, 1935, is drawn to the arrangements which have been made between the Medical Schools of St. Thomas's Hospital, St. Bartholomew's Hospital and Guy's Hospital, concerning which further details may be obtained from the Dean.

T. B. JOHNSTON,
Dean.

Pass List

UNIVERSITY OF LONDON.
PART I.
March, 1935.

J. A. Bowen-Jones
H. P. Brown
F. R. Buckler
P. S. Clarke
M. E. Davies
A. E. J. Etheridge
J. M. French
H. Greenburgh
A. C. Greene
W. E. Greenwood
W. R. L. Harrison
C. F. Hawkins
R. E. Horton
H. A. Lee
D. R. Levinson
D. C. Lewin
C. H. Phillips
R. C. Ponder
T. M. L. Price
C. P. F. Quinnell
C. H. J. Rey
F. W. B. Rilstone
R. G. Robinson
M. A. Shellim
G. F. Smart
J. H. Smart
D. Stafford Clark
I. McD. G. Stewart
G. N. J. Thomas
D. Tunarasvin
H. D. Venning
J. Y. D. Wakeham
H. F. Lunn
N. L. McNeil
C. W. Peck
K. H. Walter
E. Williams
H. Worwald

Papers by Guy's Men

H. L. Attwater. Observations on surgical uræmia. *Brit. Med. Jour.*, 1935, i, 642.

J. B. Blaikley and G. F. Gibberd. Asphyxia neonatorum treated by tracheal intubation. *Lancet*, 1935, i, 736.

N. E. Pitt. Influence of avertin upon the renal function. *Lancet*, i, 741.

H. Paxton Baylis. Partial dentures. *Brit. Dent. Jour.*, 1934, lviii, 301.

Philip Turner. Unusual perforations. *Clin. Jour.*, 1935, lxiv, 137.

A. Simpson-Smith. Appendicitis in children. *Practitioner*, 1935, cxxxiv, 518.

A. F. Hurst. Sterility and psycho-neuroses following lumbar sympathectomy. *Lancet*, 1935, i, 805.

Change of Address

Richards Roberts, L.D.S., Cherry Tree, Waldron, Essex.

Appointment

G. L. B. Thurston, The Belgrave Hospital for Children, S.W.9.

Death

PAKES.—On April 9th, 1935, at his home in Nuneaton, Warwickshire, at the age of 69, Walter C. C. Pakes, M.R.C.S., L.R.C.P., D.P.H., F.I.C., late F.R.S.I. and Examiner in S.A.

EDS. {D. P. K. / P. W. C.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

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PASSIM

THE work of constantly keeping the name of the Hospital before the public is of paramount importance if we are to receive our share of charitable contributions and endowments. Those readers of *The Times* who start on the "Personal" column before passing direct to the Cross-word receive a daily reminder of the urgency of our position, which, unvarying from year to year, must make many wonder at the ability of the Hospital to survive in the face of such persistent danger.

One of the most successful measures in the past which has combined direct profit with advertisement has been the Derby Day collection. This year a collection on Derby Day would result in collectors being present on three consecutive days in the City and West End, and Scotland Yard has refused to give permission for that date. We have, however, been exceptionally fortunate in obtaining permission for Thursday, May 23rd, a day during the period of Jubilee celebrations.

A student committee has been formed and will organise the distribution of collectors over the following districts: Southwark, Bermondsey, the City, Westminster, and St. Marylebone—the north side of Oxford Street only. A special effort is necessary if last year's amount, £974 10*s*., is to be equalled, and its success will depend upon the willingness and enthusiasm of students to perform the collecting.

On Saturday, May 11th, at 2.30 p.m., a Jubilee Carnival in aid of local charities is to be held in Southwark to inaugurate a Shopping Week. A lorry, in which will be depicted "Prehistoric Surgery," is being sent from the Hospital to take part in the procession, and a share of the proceeds of the Carnival is to be given to the Hospital.

The public will be reminded of the work of the Hospital in yet another way on the evening of Sunday, May 12th, when Major Ian Hay-Beith, C.B.E., M. C. ("Ian Hay"), a Governor of the Hospital, will issue a broadcast appeal for Guy's in the B.B.C. "Week's Good Cause."

WE had been told that the Nurses' Entertainment which was given on April 29th, 30th and May 1st would be arranged to suit all brows—high low, broad and narrow—but little did we realise how wonderfully these promises would be fulfilled. There were music, play-acting, singing and ballet, and there can have been nobody who left the auditorium without feeling that his tastes had been considered. The items were so various that it would have been too much to ask one man to review the whole programme, but we cannot allow the opportunity to pass without thanking the nurses for the show which they gave us and congratulating them. How they found time and energy to write and rehearse the plays and the ballet is a mystery, and even more are we amazed at the galaxy of talent which hides its light behind the austere bricks of the Nurses' Home.

The proceeds derived from the sale of seats and the refreshments amounted to the handsome sum of £70, which will be devoted to the Cosmo Bonsor Memorial Scholarship Fund.

WE are sufficiently bold from time to time to comment rather disparagingly on the bizarre architecture of the College, but whereas in these columns our language is restrained and in keeping

with the dignity of our calling, there are times when we wish we could throw off our veneer and give vent to our passion. Three times recently have we almost suffered an untimely death by a fall on the stone staircase, and three times have we used all our power of invective in describing the builders and architects of the College and stone masons in general. Now in a quieter mood we wonder whether it would be possible to cover the stairway with cokernut matting. Not only would such a covering lessen the risk of a serious accident, but it would help to deaden the clatter of footsteps both of those wayward inhabitants who seem to make a habit of ascending the stairs in the early hours of the morning and of the maids, who start their matutinal peregrinations at an hour when house officers are enjoying the little peace which their disturbed slumbers allow.

THE Residents of the College were very sorry when Miss Alice Park relinquished her post of temporary matron of the College a few weeks ago. She came to us at the latter end of 1934, after the sudden death of Miss Sillitoe. The post is a very arduous one, and we were very fortunate in being able to call on the services of Miss Park when, in point of fact, she was preparing to take a prolonged and well-earned holiday. Everybody has testified to the extraordinary energy which she put into her difficult task and to the way in which she set herself out to cater for the needs of the Residents.

We welcome Miss Doig, who has filled the vacancy.

ALL those who have had or still have any connection with the Hospital will have learnt with regret of the death of Lady Lane, and we feel will wish to join us in an expression of our deep sympathy with Sir William Arbuthnot Lane in his bereavement. Lady Lane had many intimate associations with the Hospital, and was indeed one of the founders of the Ladies' Association, which owes its present thriving condition largely to her untiring energy and enthusiasm.

READERS will be relieved to hear that it has been possible to reopen Patience and Samaritan Wards, which by force of circumstances had to be closed a few weeks ago.

WE should like to draw attention to the Nurses' Swimming Gala, which is being held at the Lavington Street Baths on May 20th. Invitations to take part in events have been extended to nurses from other hospitals and to the students' swimming club. We hope that full support will be given this function, in order that it may be attended by the success it deserves.

THE many In-Patients of the Hospital greatly appreciated the kindness of Messrs. Carreras, Ltd., who, at the suggestion of Mr. Edward S. Baron, one of the Governors of the Hospital, presented 3,000 cigarettes to be distributed among them as a Jubilee gift.

Tobacco smokers were also fortunate in receiving a generous supply of tobacco presented by Captain E. G. S. Waley, also a Governor of the Hospital, to whom they are most grateful.

WE wish to congratulate Dr. E. R. Boland on his being elected a Fellow of the Royal College of Physicians of London.

WE wish to congratulate the following on their appointments :—

House Physicians—
To Dr. Hurst—A. M. G. Campbell.
To Dr. Mutch—P. C. Alexander.

House Surgeons—
To Mr. Hughes—H. A. Hamilton.
To Mr. Bromley—C. G. Pantin.

Obstetric Residents—
To Mr. Chapple—J. M. McArthur.
To Mr. McNair and Mr. Cook—S. M. Whitteridge.

Out-Patient Officers—
C. A. Boucher — J. R. Dickinson
D. A. Davies — F. I. Evans

Assistant House Surgeons—
To Mr. Ogilvie—R. W. Cope.
To Mr. Doherty—W. N. Mann.
To Mr. Grant Massie—J. R. Forbes.
To Mr. Eckhoff—J. E. Giesen.

House Surgeon in the Ear, Nose and Throat Dept.—
To Mr. Mollison—G. T. Balean.

House Physician for Diseases of Children.—
M. R. Kark.

House Physician for Dermatological and Neurological Diseases—
G. H. W. Keates.

MR. D. P. KING wishes to draw attention to the fact that this is the last number of the *Gazette* which he will edit, and in future communications should be addressed to either Mr. P. W. Clarkson, who has taken on the editorship, or Mr. M. A. Partridge, the Assistant Editor.

Obituary

WALTER PAKES

WALTER PAKES, whose death we regret to record, was one of the many famous teachers who gave their services to the students at Guy's Hospital at the end of last century, and the beginning of this. He was, probably, associated more with J. W. Washbourn than anyone else at the time, and he wrote papers in collaboration with him. Pakes came to Guy's when he was rather over the usual age of entry, but quickly made his mark as a good dissector, and student of Anatomy, gaining prizes every year for three years in this subject. He qualified in what was at the time quite a usual period to take over the necessary subjects, namely, four years, and did not do any definite clinical house appointment, but went at once into the bacteriological side of medicine. At that time, namely, in the late nineties of last century, he was the first occupant of what was later to become the professorship of Bacteriology, until quite recently in the occupation of Professor Eyre. He had done well at school in various subjects, including music, and this stood him in good stead when he became a member of the entertaining company known as "The Disguysed Minstrels." He also took a great interest in the Students' Debating Society, being with Professor Sir Gowland Hopkins one of its founders. This Society flourished for a very long time, and then faded out, to be succeeded by the present one, and it might be as well to indicate here that even the present society might do better if it were not to trust too much to members of the staff. In Pakes's days students were the chief speakers at its meetings, and some of them as Hodgson and Brydone, were remarkably able speakers.

Pakes was a good teacher, but perhaps slightly limited by his proclivity for making jokes during his lectures. As a laboratory teacher he was also first class. He occupied, in addition to his post at Guy's, the position of Lecturer on Bacteriology at the Bedford College for Women.

For some reason or another Pakes left Guy's in 1902 to take up an important appointment in South Africa during the last year of the war, and it was in this colony that he added to his fame by stamping out plague in the district surrounding Johannesburg. He was probably allowed a free hand to do what he liked, and this kind of work suited his temperament very well, as he was quite unable to tolerate a chief, and never suffered fools gladly, but it is possible that he never realised that all chiefs are not fools.

But this stamping out of plague shows his character very well. He probably never got the reputation that he deserved or the rewards that he ought to have had. He stayed out in South Africa until the Great War came on, and then took part in the East African campaign, and served as Sanitary Officer in the field, and this appointment shows the direction that his ability took in connection with Bacteriology He leant much more to the Public Health side of the science, and wrote several important papers in connection with this side of his work. He also wrote a work on Hygiene, which was as warmly received by some reviewers as it was hotly condemned by others. Doubtless this favourable and unfavourable criticism was due to Pakes's character.

Pakes came home in 1917 and was appointed acting Medical Officer of Health for the County of Southampton, as Hampshire is officially known. Here he did useful school work, but after the war was over he decided to go into practice at Nuneaton. Here he was much beloved by those who knew him intimately, and had several friends in all classes, but the best tribute to his life and memory lies in the fact that, as he lay dying, working men who belonged to his ambulance classes took it in turns to stay up with him, night by night. To know Pakes was to remember him, and it will come as no surprise for our readers to know that when the writer of this article saw him in his last few years, though he had not seen him for thirty years, he recognised him at once and went on, so to speak, with the conversation that they had held together at the beginning of the century.

We were fortunate enough at Guy's to have Eyre succeed Pakes, but there can be no doubt that Pakes might have stayed longer with us had he been more tolerant of being supervised by men who had, perhaps, sounder judgment and greater knowledge of the world. Perhaps he was one of those men who see by instinct what the average man sees only by the light of long-continued thought and reason. We wonder how he and the late Marcus Pembrey would have got on together had they been colleagues for any length of time. As unusual people sometimes come together, Walter Pakes was a greater man than his academic distinctions would indicate, and he was independent of this world's prizes for as long as he could be. His independence of character may have been due to the fact that he was born in the flat land between Preston and Lancaster, where there are wider views in one sense than anywhere

else in England. To one who has looked upon the Lake Hills and the giants of the Pennine Range from early infancy, Primrose Hill and Brockley Rise may offer few attractions, but they may be, financially, more sound.

Pakes leaves a son who is in South Africa, and a daughter, who was a nurse at Guy's and did excellent work at Out-Patients in quite recent years. To them both we offer our sincere sympathy in their loss.

DR. DAVID TRAIL

THE death of David Trail must have come as a shock to a large number of Guy's men. He entered Guy's in 1895 and secured a place in the Rugby XV the same year. He was a man of fine physique and as a forward was very difficult to beat. He was a hard worker in the scrum and fast in the open; he also was a keen tackler and, taken all round, was one of the best forwards Guy's ever had. He did a lot towards winning the Cup that year, the first time that Guy's had won the Cup for some years.

Besides being a great sportsman he was also a great success at his work. He took the Colleges in 1902 and the M.B., B.S.Lond. in 1903. He did Clinical, A.H.S. to Sir Wm. Arbuthnot Lane, and H.P. to Sir Cooper Perry, finishing his appointments in March, 1904. He married Miss Green in 1905, and went into practice at Falmouth the same year, where, by his sound knowledge of medicine and fine character, he collected a large practice. He died at the comparatively early age of 60 beloved by all.

DR. P. F. McEVEDY

MANY readers will lament the death in New Zealand on March 2nd of Dr. Patrick Francis McEvedy at the age of 55. He qualified Conjoint and M.B., B.S. in 1906. When he was a student here he showed outstanding ability. He went into practice in New Zealand in 1909, and the following is an extract from a newspaper cutting which testifies to the respect which was accorded him and to his very wide interests, which enabled him to have contact with many aspects of life :—

" Dr. McEvedy occupied an unusual position in Wellington, because of his widely diversified interests in sporting, commercial and social activities. He was best known for his association with Rugby football, first as a notable representative player, and later as an administrator of wide vision and sound judgment. He was born in Southbridge, Canterbury, and was educated at St. Patrick's College, later completing his studies at Guy's Hospital, England. His early experience of Rugby enabled him to become captain of the celebrated Guy's fifteen, and soon afterwards he was appointed to a similar position in the Kent county team, for which he played in 70 matches. So impressive was his form that he was selected to tour Australia and New Zealand with the British team in 1904, and four years later he toured the same two countries again as vice-captain of the Anglo-Welsh team. It was during the Australian portion of the 1908 tour that he broke an arm and decided to retire from active play, and, except for representing the Wellesley Club against the officers of H.M.S. *New Zealand* a few years later, he adhered to his resolution.

In 1909 Dr. McEvedy commenced practice in Wellington at 158, Willis Street. He became a member of the Wellington Rugby Union in 1910, and was elected a vice-president in 1917, filling that office until 1929, when he entered upon a four-year term as president. From 1913 onwards he took a prominent part in the work of the New Zealand Rugby Union, acting for several years as the Auckland delegate and for a further period as the Wellington delegate. He was also a member of the management committee of that body from 1915 to 1920. Last April he was elected president of the parent union, and held that position up to the time of his death. For some years past he was also president of the Wellington Football Club.

Cricket also occupied much of Dr. McEvedy's attention, and in the Wednesday matches played before the Great War he took a leading part. He was an active player until about six years ago in various club matches. For a very long period he was vice-president of the Wellington Cricket Association and a vice-president of the Wellington Cricket Club.

Among other interests, Dr. McEvedy was chairman of the New Zealand Boxing Council and a member of the Wellington Boxing Association; president until recently of the St. Patrick's College Old Boys' Association; chairman of directors of J. Staples & Company, Ltd., and a director of

New Zealand Breweries, Ltd.; a steward of the Wellington Racing Club; chairman for several years of the Wellesley Club committee; a member of the Wellington Club; a former director of the Phœnix Assurance Company, Ltd.; a life member of the Heretaunga Golf Club; a member of the Hutt Valley Gun Club (the last opening day was the first he had missed for about 20 years), and Medical Officer of the Wellington City Council.

A striking tribute to Dr. McEvedy's enthusiasm for Rugby was paid by the management committee of the Wellington Rugby Union before his departure on a visit to England in 1928, when a presentation was made to him. The president (Mr. A. Wiren) said that Dr. McEvedy had done splendid administrative work, and had also given good service in a professional capacity to the players, many of whom he had treated and not charged a penny. There had been one or two crises with Athletic Park, and Dr. McEvedy had given assistance. Not long before he and others had helped to put the finances on a sound footing. Footballers in Wellington appreciated the position, and they would miss his valuable aid."

Calcium in Therapeutics

By E. C. Warner, M.D.

Reprinted by kind permission from the "Charing Cross Hospital Gazette."

CALCIUM is an element which is contained in almost all the tissues of the human body, and, owing to its divalency, small variations in its concentration are capable of having profound effects from a physiological and from a pathological standpoint. Owing to the advances of biochemical methods and the isolation of an active extract of the parathyroid glands, there has been a great advance in our knowledge of the atcivities of calcium and of the therapeutic measures which are thus placed at our disposal. It is as well first to discuss certain physiological considerations, to enable the basis of calcium therapy to be more clearly understood. In the healthy adult there is a condition of calcium equilibrium, and this requires the absorption of about 1 gram of calcium oxide per day, which is balanced by a similar loss in the urine and fæces. Therefore in calcium balance experiments, to know whether the body is storing or being depleted of calcium, the total calcium intake and excretion over a period of days has to be measured. When there is to be an actual storage, as in the growing child, the physiological requirements will exceed the adult figure of 1 gram per day. But such is the adaptability of the human body that once the period of infancy has passed, children appear to be able to grow normally, and to maintain good physical health on a calcium-deficient diet.

Calcium absorption takes place almost entirely from the upper part of the small intestine (hence the futility of rectal administration). The amount absorbed depends on a number of factors: certain foods contain much more calcium than do others, and calcium-rich foods are such as milk and butter. When calcium salts are administered by mouth, the amount absorbed is directly dependent on the amount of *soluble* calcium salts in the small intestine. Therefore the administration of calcium salts, with or after meals, causes the greater part to be precipitated in the small intestine as the insoluble calcium carbonate and tertiary phosphate; and if the food contains much fat, a large amount also goes to form insoluble calcium soaps. To enable calcium salts to be absorbed, soluble compounds must be chosen and these must be given in water at least half an hour before meals; the simultaneous administration of lactose or of *B. acidophilus* emulsion will further aid absorption by tending to keep the intestinal contents acid.

Calcium excretion takes place in the urine and in the fæces. On a low-calcium diet there is a loss of calcium which exceeds the intake, hence the need for about 1 gram of calcium oxide per day to ensure equilibrium. Normally a greater proportion of calcium is lost in the fæces either because of non-absorption or of re-excretion through the large intestine. In the presence of vitamin D a much greater amount is temporarily retained, and in this condition and in hyperparathyroidism the urinary calcium is increased. The total calcium output is not necessarily dependent on the blood calcium values, as is shown in hyperthyroidism, where the body is greatly depleted of calcium and of phosphorus by excessive urinary excretion, although the serum content remains normal.

Just as the liver acts as a storehouse for glycogen, so do the bones for calcium and phosphorus. X-ray examination demonstrates the density of the trabeculæ of the long bones, and is a good index of the amount of stored calcium phosphate; and where there is a prolonged drain on the calcium stores, as in hyperparathyroidism, hyperthyroidism and in conditions of prolonged acidosis, the osteoporosis of the bones is a striking feature.

Since calcium and phosphorus are absorbed into the blood, and hence reach the tissues, it is natural

that the calcium content of the blood should have received widespread attention. But even so, it is important to reiterate that there may be a depletion of calcium in the tissues, and even excessive excretion in the urine, with normal blood values. Since the calcium content of the red blood cells is negligible, it is usual to express the calcium content in terms of serum calcium, the normal values ranging between 9.8 and 11.5 mgm. per cent. Of this calcium only about half is in an active form, as the other half is bound to protein. We can therefore divide the blood calcium into a soluble diffusible form (probably acid phosphate and bicarbonate) and a non-diffusible form. It can be seen that the total serum-calcium is not a measure of the active (diffusible) calcium; but as Cameron and Moorhouse have pointed out, the cerebro-spinal fluid being practically free of protein, the cerebro-spinal fluid content probably represents the diffusible fraction of the blood calcium, and artificial membrane methods of separating the diffusible fraction have confirmed this. Even so, only a part of the diffusible calcium is really in an active form, and this is represented by the ionic calcium. Unfortunately, this is a very difficult fraction to measure, and the nearest approximation we can get at present is to regard the diffusible calcium as a measure of the ionic calcium. All this may be summarised as follows:—

Serum calcium (9.8–11.5 mg. per cent.)
=non-diffusible calcium 5.0–5.5 mg. per cent. (calcium protein compound).
+diffusible calcium 4.9–5.9 mg. per cent.

Diffusible calcium (=C.S.F. calcium)
=ionised calcium 2.0 mg. per cent.
+un-ionised calcium.

Although the ionic calcium of the blood cannot be accurately measured, we know a number of factors which will influence it. These may be summarised thus: (1) Factors which increase ionic calcium are: an increase in the amount of diffusible calcium, an increase in $H^{\cdot}$ ion concentration, and a decrease in inorganic phosphate. (2) Factors which decrease ionic calcium are: a decrease in the amount of diffusible calcium, an increase in the OH ion concentration, in the inorganic phosphate, and in the sodium and potassium concentrations.

It should be remembered that as the calcium ion is divalent, very small changes in the amount of this will have considerably greater effects than would similar variations in univalent ions.

What method have we to enable us to increase the amount of circulating calcium? Several are available, although they act in different ways, and those with which we are chiefly concerned are the administrations of (*a*) calcium salts; (*b*) vitamin D and ultra-violet rays; (*c*) the active extract of the parathyroid glands (parathormone, Collip); (*d*) ammonium chloride; (*e*) thyroid extract.

(*a*) The administration of calcium salts can take place by mouth, intramuscularly or intravenously. When given by mouth the more soluble salts are used, such as calcium gluconate (60 grains t.i.d.), calcium lactate, calcium chloride, or calcium sodium lactate (Kalzana), 30 gr. t.i.d. Calcium chloride and, to a much less extent, calcium lactate, are irritating to the stomach and intestines, but the former possesses the additional property of producing an artificial acidosis. For routine purposes Kalzana and calcium gluconate are usually preferred, and must be given with water at least half an hour before meals, the first dose to be taken immediately on rising in the morning; but if the calcium deficiency is a severe one, larger doses must be used. It has been found that after such doses the blood calcium rises 2-4 mg. per cent. within one to two hours, and returns to normal again within eight hours. Intramuscular therapy calls for the use of calcium gluconate, as the other compounds are all too irritant. Ten c.c. of the 10 per cent. solution produces a rise of 3-4 mg. per cent. in the blood serum within twenty minutes. Intravenous therapy ensures a still more rapid effect; calcium gluconate (10-20 c.c. of 10 per cent.) is again to be preferred, for any solution spilt outside the vein is non-irritant, but 10 c.c. of 10 per cent. calcium chloride can also be used. In either case the solution should be injected slowly to minimise unpleasant effects such as flushing of the face, and there is found to be a rise of 6-8 mg. per cent. of serum calcium, which returns to normal within two hours. The rise is distributed almost equally between the diffusible and non-diffusible calcium. In any case, these salts should be supplemented by a calcium-rich diet.

(*b*) The actions of vitamin D and of ultra-violet rays are similar, in either case the therapeutic effect being to fix a greater proportion of the absorbed calcium in the blood, the tissues, and especially the bones. There is a rise in the serum calcium and serum phosphate. With gross overdosage (hypervitaminosis) the production of abnormally high calcium and phosphate values in the blood leads to serious effects, in acute cases leading to coma and death, and in chronic cases to metastatic calcification. The rise in the serum calcium value affects not only the total, but also the diffusible fractions.

(*c*) The active extract of the parathyroid glands (parathormone-Collip) is useless by mouth, but when given subcutaneously, or preferably intramuscularly, there is often a considerable rise in

the total serum calcium value, with a fall in phosphate. Although the evidence is not conclusive, most workers believe that the rise in the serum calcium affects both diffusible and non-diffusible fractions. One great disadvantage of parathormone is the variability of response to it in different individuals. The same has been shown in dogs, and although about 80 per cent. of people show a rise in serum and cerebro-spinal fluid, in about 20 per cent. there is no effect at all. Particularly when it is used over long periods of time, the depletion of the calcium reserve in the bones must be guarded against by simultaneous administration of large doses of calcium salts. No symptoms usually arise until the blood calcium is over 14-15 mg. per cent., and then an early warning in the occurrence of vomiting will be sufficient to warrant a slight reduction in dose. The usual adult dose is ½ c.c., b.d., and, although it is useful to be able to measure the rise in blood calcium, it is not essential to do so.

(*d*) Ammonium chloride, in doses of 20-30 grains t.i.d., is capable of increasing the ionisation of calcium without necessarily affecting the total serum calcium value.

(*e*) Thyroid extract chiefly exerts its effect on calcium metabolism by increasing the excretion of calcium and phosphate, and so depleting the bones. While it has little effect on a normal serum calcium figure, it is capable of elevating a subnormal value to normal, and so is of benefit in relieving the symptoms of hypoparathyroidism.

Without entering into any great detail, the main pharmacological effects of calcium may be summarised as (i) decreasing the excitability of muscles and nerves; (ii) decreasing the permeability of capillaries and of cell membranes in general; (iii) increasing the reserve of calcium salts in the bones and teeth; (iv) increasing blood coagulability. We are able to make use of one or more of these effects in diseased conditions, and some of the more important are worthy of detailed study.

In *diseases of bones* deficiency of calcium phosphate may be due to insufficiency of calcium or of phosphorus, or of both. In osteomalacia and the allied condition of hunger osteopathy where defective absorption of both elements and often of vitamin D are of major importance, the result is a low value in the blood of calcium and of inorganic phosphate, with evident depletion of the bones. In rickets, a deficiency of absorption of either calcium or phosphorus will lead to defective calcification. Therefore we may find a low serum phosphate with a normal serum calcium, or a normal serum phosphate with a low serum calcium. In practice both occur, although the low phosphate type of rickets is the commonest. It is almost invariably the low calcium type which we associate with infantile tetany. The treatment is evidently to ensure a sufficient calcium and phosphorus intake and cause their fixation in the body tissues and subsequent deposition in the bones by administering vitamin D or ultra-violet light. The same principles apply to the prevention and treatment of dental caries; and, as Mrs. May Mellanby has demonstrated, the administration of foods containing calcium, phosphorus, and vitamin D, such as milk, egg-yolk, and cod-liver oil, will do much to eliminate this condition.

Diffuse osteitis fibrosa is a condition which is a perfect example of the discovery of the cause of a diseased process, brought about by the co-operation of the clinician and the bio-chemist. The osteoporosis and spontaneous fractures which are met with are now well known to be due to overaction of the parathyroids, either by simple hypertrophy or by adenoma formation. These cases can be readily recognised by the high serum calcium (over 13 mg. per cent.) and low-serum phosphate which are present. A recent case which we investigated showed values of:—

Serum Calcium	*Serum Phosphorus*	
16.5 mg.%	2.1 mg.%	Before operation.
7.8 mg.%	3.9 mg.%	After operation.
11.1 mg.%	2.7 mg.%	Ten weeks later.

Once the offending parathyroids have been removed, it is very important to help recalcification of the bones by administering large doses of calcium salts and vitamin D, with occasional examination of the blood and the radiological appearances of the bones, until the condition has been remedied as far as possible. Although the spontaneous fractures met in this condition heal so much more readily with the aid of calcium administration after parathyroidectomy, there is no reliable evidence that calcium or vitamin preparations are of any value in the treatment of fractures in general.

In the more acute forms of *liver disease* American work has proved the value of the administration of calcium salts. This was first shown experimentally by Minot and Cutler, who found that with carbon tetrachloride and with chloroform poisoning the severe toxic hepatitis could be prevented or controlled when measures were instituted to raise the blood calcium. Although the blood calcium is not necessarily lowered in acute hepatic disease, increasing the store of calcium in the tissues can prevent liver damage, and it is of interest to note that these same measures also help to bring the lowered blood sugar to normal, thus allowing a reaccumulation of liver glycogen. Here we have a clear instance of the value of calcium salts (probably making up for a

depletion in the tissues), where the calcium values in the blood are often within the normal range; it is believed that the calcium protects the cells by virtue of lessening their membrane permeability. These same beneficial effects have been found to occur in eclampsia and in acute yellow atrophy; the treatment often recommended as being most helpful is to give a low protein diet, with large quantities of glucose and fluid, and calcium gluconate intravenously and intramuscularly in divided doses amounting to 80-100 c.c. of 10 per cent. solution for the first day or two, with parathormone in doses such as 20-25 units a day. With these large amounts it is evidently essential to control the therapy with daily blood estimations, and accordingly reduce the initial doses after the first one to two days.

In *diseases of the central nervous system* and of the *muscles*, we have obtained results which suggest that this field is one which will yield good therapeutic results. For years the value of calcium therapy has been recognised in tetany, where the diffusible and ionic calcium values are low. Calcium chloride, calcium gluconate, parathormone, and ammonium chloride all play their parts in controlling the different forms of tetany. In chorea, where we have found the diffusible calcium of the blood as measured in the cerebro-spinal fluid to be low, parathormone helps to control the nervous phenomena in a number of cases. The effect is probably two-fold: partly to decrease in the neuro-muscular excitability by raising the diffusible and ionic calcium, and partly to decrease in the cell permeability (so making the nerve cells less susceptible to toxins). These same mechanisms are probably at work in cases of progressive muscular atrophy, muscular dystrophy, amyotonia congenita, Werdnig-Hoffmann's disease, and in one case of Schilder's disease, where very encouraging results have been obtained. A preliminary account of these has been published,* and further cases are to be published in the near future. In view of the recent nature of this work, notes of two cases are quoted from the original paper to show the striking nature of some of the results.

Werdnig-Hoffmann's Atrophy.—This was a female child of seventeen months, with the typical well-covered face and wasted limbs, who could not move her legs and could scarcely move her arms. Her cerebro-spinal fluid gave values of calcium 4.64 mg. per cent., and phosphorus 1.60 mg. per cent. She received 2-minim doses of parathormone twice daily, with calcium salts and radiostoleum by mouth. Within three months she was able to walk round her cot and had gained 38 oz. in weight, her cerebro-spinal fluid values being calcium 4.91 mg. per cent. and phosphorus 1.43 mg. per cent.

In relation to these results, M. Brown and C. G. Imrie have shown that parathormone is essential for the normal resynthesis of creatine phosphate after muscular contraction.

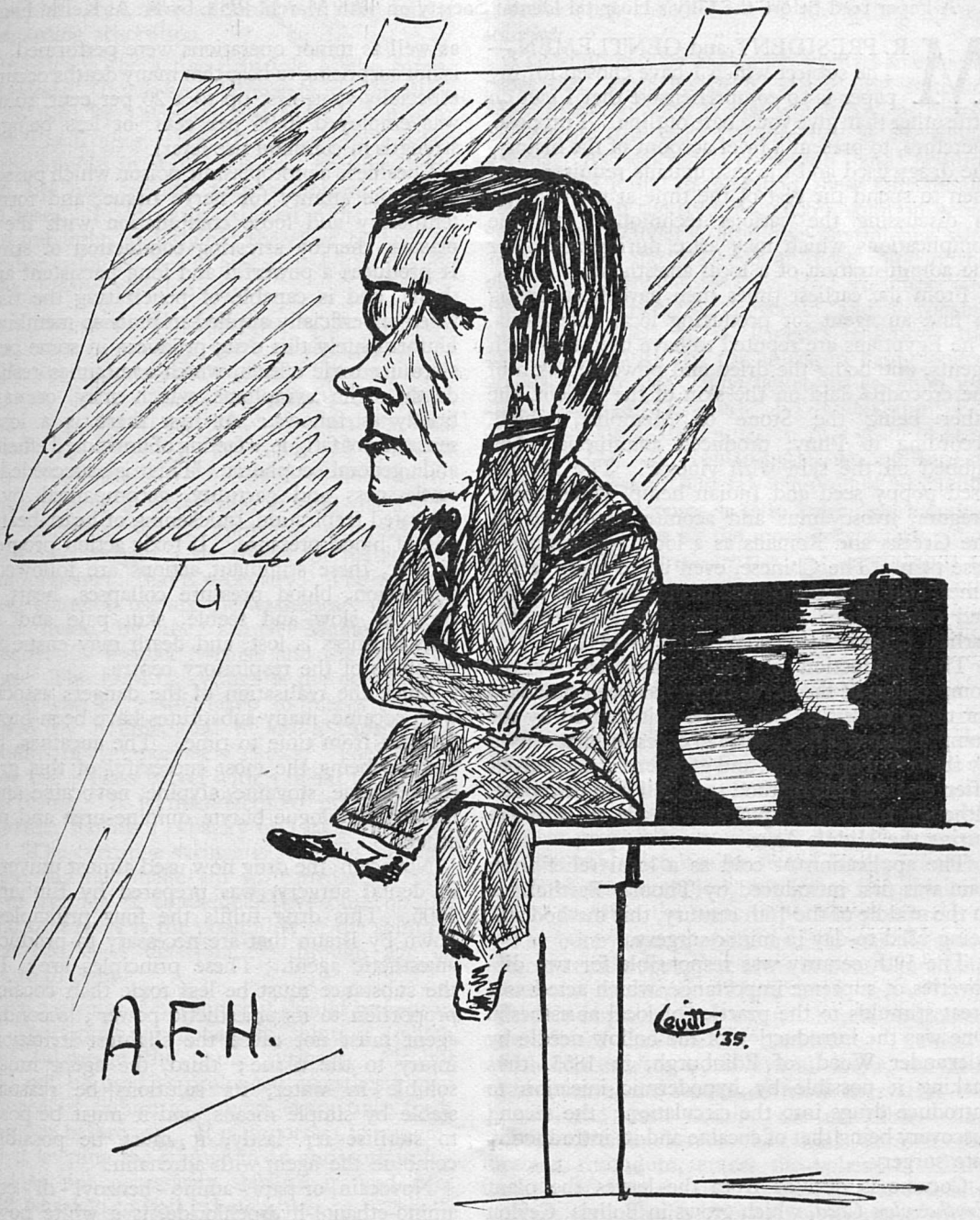
Cerebral Degeneration probably due to Schilder's Encephalitis.—H. C., *æt.* nine, was admitted with involuntary inco-ordinate movements of his arms, legs and face. These became more marked, and the patient became blind, probably due in part to involvement of the occipital cortex. Later, bilateral optic atrophy occurred, and he became childish, and finally incontinent, comatose, and had to be tube-fed. His respiration rose to a rate practically the same as of his heart, as if his diaphragm was contracting in response to each heart-beat, a condition resembling that of the response to mechanical stimulation seen in tetany. The cerebro-spinal fluid gave values of calcium 4.44 mg. per cent. and phosphorus 2.7 mg. per cent. After ten days of parathormone injections he began to improve, and finally became completely normal. His eyesight returned, and his optic discs largely regained their normal colour. His final cerebro-spinal fluid values were: calcium 4.86 mg. per cent., phosphorus 1.2 mg. per cent.

Aub and Hunter have demonstrated the value of calcium therapy in the treatment of *plumbism.* In the acute stages of poisoning, large doses of calcium salts cause the lead to be deposited in the bones, and so the symptoms cease. Then it can be eliminated at will by giving a low-calcium diet, with either ammonium chloride or parathormone (in doses of 40-80 units a day). In the stage of elimination no further symptoms arise, even in the presence of the circulating lead, so long as the circulating calcium is kept at a high value, again suggesting that the calcium protects the tissue cells by diminishing their permeability.

It is evident that calcium therapy has been enormously enhanced by recent researches, and especially by the discovery of the active principle of the parathyroid glands; and although calcium therapy has been used in the past with very varying results, with modern methods and a proper understanding of the principles underlying its therapeutics, it may prove of value in many different types of diseased conditions.

*E. C. Warner and A. C. Hampson: *Proc. Roy. Soc. Med.* xxv, 1932, 19.

The Editor will, at all times, be glad to consider articles or sketches, provided that they are accompanied by the writer's name and address, not necessarily for publication. Authors who desire reprints of their papers should make their own arrangements with the Printers when they return their proofs. All contributions to be addressed to *The Editor*, who does not accept responsibility for the views expressed by contributors


A.F.H.
Levitt '35.

Local Anæsthesia

A Paper read before the Guy's Hospital Dental Society on 19th March, 1935, by K. A. Keith, Esq.

MR. PRESIDENT and GENTLEMEN,—The subject which I have chosen for my paper is so comprehensive that I can do little other than give you a bare outline. I propose, therefore, to present a brief account of the history, the drugs used and the instruments required, and then to spend the rest of the time at my disposal in discussing the various techniques, and the complications which may arise during and after the administration of a local anæsthetic.

From the earliest times men have been trying to find an agent for producing local anæsthesia. The Egyptians are reputed to have used two such agents, one being the dried and powdered skin of the crocodile, laid on the skin of the patient, the other being the Stone of Memphis, which, according to Pliny, produced anæsthesia when rubbed on the skin with vinegar. The Hindus used poppy seed and Indian hemp, whilst mandragora, hyoscyamus and aconite were used by the Greeks and Romans as a local application to ease pain. The Chinese, even up to quite recent times, still used the datura tatula, cannabis indica and other drugs which were mentioned in the earliest materia medica compiled in 1597.

The production of local anæsthesia by the compression of the nerve trunk has been practised for many centuries, but as the pain caused by the compression was frequently in excess of that caused by the actual operation, and gangrene and paralysis often ensued, this method soon fell into disrepute, although many attempts were made to revive it during the Middle Ages.

The application of cold as a local relief from pain was first introduced by Thomas Bartholinus in the middle of the 16th century, this method still being used to-day in minor surgery.

The 19th century was responsible for two discoveries of supreme importance, which acted as a great stimulus to the practice of local anæsthesia. One was the introduction of the hollow needle by Alexander Wood, of Edinburgh, in 1853, thus making it possible by hypodermic injection to introduce drugs into the circulation; the second discovery being that of cocaine and its introduction into surgery.

Cocaine is derived from the leaves the plant *Erythoxylon Coca*, which grows in Bolivia, Ceylon and Peru, where it has been worshipped from ancient times as a divine gift to ease pain. As was to be expected, this new drug was used and experimented with extensively. Amputations of the leg, tracheotomy, extirpation of large tumours, as well as minor operations were performed, so it is not surprising to hear that many deaths occurred, especially as at first up to a 20 per cent. solution was employed (0.05 per cent. or less being the strength in common use later).

Cocaine is a protoplasmic poison which possesses a specific affinity for nerve tissue, and forms a temporary and loose combination with the cell plasma, thereby arresting conduction of stimuli. It produces a powerful and long persistent anæsthesia, and is capable of penetrating the tissues when superficially applied to mucous membranes. Unfortunately this drug produces in some people alarming toxic effects, which sometimes result in death. The symptoms which may occur are briefly as follows: At first there is a loss of sensation of fatigue, a feeling of unwonted efficiency and general euphoria. This is succeeded by restlessness and garrulity, accompanied by accelerated respiration, quickening of heart-beat and rise of blood pressure. If toxic action progresses further, these stimulant actions are followed by depression, blood pressure collapses, heart beat becomes slow and feeble, skin pale and cold, consciousness is lost, and death may ensue from paralysis of the respiratory centre.

Since the realisation of the dangers associated with cocaine, many substitutes have been brought forward from time to time. The eucaines, beta-eucaine being the most successful of this group, tropococaine, stovaine, alypine, novocaine and its higher homologue butyn, quinine-urea and many others.

Novocain, the drug now used almost universally in dental surgery, was prepared by Einhorn in 1905. This drug fulfils the four principles set down by Braun that are necessary to produce an anæsthetic agent. These principles are: First, the substance must be less toxic than cocaine in proportion to its anæsthetic power; second, the agent must not cause the slightest irritation or injury to the tissue; third, the agent must be soluble in water, its solutions be reasonably stable by simple means, and it must be possible to sterilise it; lastly, it must be possible to combine the agent with adrenalin.

Novocain, or para - amino - benzoyl - di - ethyl - amino-ethanol-hydrochloride, is a white powder, readily soluble in water, aqueous solutions of which can be heated up to 120° C. without undergoing decomposition. It is about seven times less toxic than cocaine, and with the exclusion of air it can be kept for an indefinite length of time.

With the addition of adrenalin it produces the desired anæsthetic effect, the adrenalin constricting the walls of the capillaries and small vessels within the injected area, thus diminishing toxic effects and retarding absorption.

Adrenalin is the active principle of the suprarenal glands. It was first obtained in its crystalline form in 1901 by Takamine and Aldrich, independently of each other. It is a greyish-white powder, slightly soluble in water. It has no anæsthetic action, but may produce toxic symptoms even in small doses. It is readily oxidised in the presence of air and light, and should therefore be kept in an amber-coloured bottle and exposed to the air for the shortest possible time.

Both novocain and adrenalin can be prepared synthetically. This is a great advantage, for, as Mr. Doubleday in his Dental Board Lecture, 1929, points out, " drugs like cocaine, which are prepared from plants, vary in pharmaceutical activity with the district in which they grow, whereas synthetic drugs have a definite and constant composition."

One of the great advantages of local anæsthesia is the simplicity of the apparatus required. A syringe, needles and a receptacle for making up the solution are all that is necessary. The syringes in most common use are the washerless, all-metal syringe made by the Dental Manufacturing Company, the Fischer Syringe and the cartridge syringe. The D.M.C. syringe is the one we use here. It can be easily taken to pieces and be sterilised by boiling, and it has a capacity of 40 minims, or approximately $2\frac{1}{2}$ c.cs. The Fischer syringe has a glass barrel with a metal frame and metal piston. It is manufactured in two sizes, the smaller having a capacity of 1 c.c., the larger 2 c.c. The cartridge syringe is supplied with the solution already made up in cartridges. This type of syringe is condemned by some on the ground that there is the possibility of the solution in the cartridges deteriorating through age or exposure to light.

When a syringe is not in use it should be kept in a jar containing an antiseptic solution (which should submerge the entire syringe). Alcohol should not be used as prolonged anæsthesia may be caused by failure to remove every trace from the syringe before use. It is important to remember that keeping the syringe in an antiseptic solution does not necessarily sterilise it, and care should be taken to boil it before use.

The needles in common use are made of steel; they are sufficiently cheap to enable them to be discarded after one or two injections, rigidity and sharpness thus being maintained because of their short period of use. Iridio-platinum needles are expensive, but they do not rust, and can be sterilised by flaming.

As novocain is decomposed by alkalies, a porcelain cup should be used for boiling up the solution.

The solution to be used, apart from its anæsthetic properties, must be fresh, sterile and isotonic. An isotonic solution is one which has, as nearly as possible, the same constituency as the blood plasma. As calcium, potassium and sodium chloride are found in the blood, these salts should be included in the solution, such a solution being known as a Ringer's, after the physiologist who demonstrated the presence of these salts in the blood. Sterility, isotonicity, and freshness are assured by dissolving novocain and novocain-adrenalin tablets in a Ringer's solution, the required quantity for the injection being boiled up just before use. The tablets in common use are the familiar " E " and " F " tablets, the " F " containing about three-quarters of a grain of pure novocain, the " E " containing about one-third of a grain of novocain and 1/1,200 grain of adrenalin.

For dental purposes, a $1\frac{1}{2}$ to 2 per cent. solution has been found to be the most satisfactory.

One " E " and two " F " tablets dissolved in 6 c.cs. of Ringer's solution give a 2 per cent. solution of drug, and a $1\frac{1}{2}$ per cent. solution can be made up with two " E " tablets in 3 c.cs. of Ringer.

The practice of local anæsthesia without a knowledge of anatomy is like trying to pick the Derby winner with a pin. You may be lucky, but the odds are heavily against you. In this branch of dental science 100 per cent. success is essential in order to retain the confidence of your patients. I do not propose to enter into a long discourse on the anatomy, such can be found in any standard text-book on the subject, but I may be permitted just to mention the more important points.

The outer aspects of the maxilla and mandible present certain spongiose areas of bone containing numerous canaliculi. These areas are of considerable importance to us and should be studied carefully. I shall refer to them later. The nerve which concerns us is, as you all know, the fifth cranial nerve, the second division enervating the maxilla, the third division the mandible. The second division leaves the skull through the foramen rotundum, enters the spheno-maxillary fossa, runs along the floor of the orbit, and finally emerges through the infra-orbital foramen, where it divides into its terminal branches. In its course this nerve gives off branches supplying the skin over the malar prominence and side of scalp, and three superior dental branches, the posterior, descending on the zygomatic surface of the maxilla,

enters the posterior superior dental canal to supply the upper molar teeth, with the exception of the anterior buccal root of the first molar. The bone and gum overlying these teeth also derive their nerve supply from the same source.

The anterior and middle superior dental nerves enervate the incisors and canines and the premolars respectively. The anterior buccal root of the first molar is supplied by the middle superior dental branch. These nerves form the outer maxillary nerve loop, the inner loop being formed by the anterior palatine and naso-palatine nerves, both branches from Meckel's ganglion. The lower teeth are supplied by the inferior dental nerve, which leaves the skull through the foramen ovale and passes downwards and forwards in company with the lingual nerve, to enter the interior dental foramen. The buccal aspect of the gums in the molar region derives its supply from the long buccal nerve, another branch of the mandibular division, the mental nerve supplying the gums in the incisor, canine and premolar area. The inner mandibular loop is formed by the lingual nerves, which are responsible for the lingual aspect of the jaw.

The blood supply to both upper and lower teeth is derived from branches of the internal maxillary artery, itself a branch of the external carotid.

CONTRA-INDICATIONS OF LOCAL ANÆSTHESIA

Briefly, local anæsthesia is contra-indicated where acute inflammation is present; apart from being very painful, there is a serious risk of spread of inflammation or general toxæmia. Regional anæsthesia, however, may be employed provided the needle is inserted a sufficient distance away from the site of the inflammation. It is also inadvisable to inject into patients who are recovering from 'flu, or who suffer from boils, as there is the risk of auto-infection.

There is a great difference of opinion as to when adrenalin is contra-indicated. King maintains that it should not be used in organic heart disease, aneurism, arterio-sclerosis, chronic nephritis, pulmonary tuberculosis and all cases of high blood pressure. Although several cases have been recorded of dental surgeons using adrenalin on patients suffering from the above diseases with no bad effect, it is better to be on the safe side and avoid the use of this drug in these cases.

Local anæsthesia may be defined as a state of insensibility of a local circumscribed area. This state of insensibility may be brought about, firstly, by infiltration anæsthesia, which consists of depositing the solution as near as possible to the field of operation with a view to anæsthetising the terminal filaments of the sensory nerves so as to suspend their normal function of picking up impulses of pain. This group includes surface anæsthesia, the submucous, subperiosteal, intra-osseous and papillary infiltrations; secondly, nerve-blocking or regional anæsthesia. This method, which is a product of more recent years, consists of depositing the solution as near as possible to the nerve trunk so as to prevent the transmission of sensory stimuli from the peripheral filaments to the brain.

Surface anæsthesia is indicated for such operations as lancing abscesses, extracting loose, deciduous teeth (or desensitising the mucous membrane prior to insertion of needle). Ethyl chloride, in the form of a thin spray, is of great value, as on application to the skin it evaporates so rapidly that considerable heat is withdrawn from the tissues, which are changed into a solid state, the sensory function of the nerve filaments thus being impaired.

The submucous injection aims at depositing the solution in the tissues close to the apex of the tooth, and allowing it to penetrate through the bone. This injection differs from the subperiosteal in that in the former the solution is deposited outside the periosteum, whereas in the latter it is deposited beneath the periosteum. The submucous is preferred to the subperiosteal method as the latter is painful and requires force, inflammation and after-pain frequently resulting through injury or stretching of the periosteum.

In the intra-osseous infiltration the drug is injected directly into the cancellous bone. The method recommended by Parrott consists of drilling a hole through the mucous membrane and outer alveolar plate with a fine rose-head burr and injecting the fluid through the hole thus made. This method, on account of its lengthy preparation and risk of sepsis, is seldom used.

In the papillary injection, the solution is injected into the interdental papillæ both mesially and distally to the tooth which is to be anæsthetised.

The submucous injection may be used for all the teeth both in maxilla and mandible, but it will be remembered that in the mandible the outer plate is very dense and presents few canaliculi, thus making it an uncertain injection. For this reason it is advisable to limit infiltration anæsthesia in the mandible to the six front teeth, and to use the mandibular injection for the premolars and molars. The maxilla, on account of its spongiose nature, is especially suited for the submucous; however, regional anæsthesia in the form of the posterior superior alveolar injection, the infra-orbital injection, and the posterior and anterior palatine injection is in daily use.

THE SUB-MUCOUS INJECTION

The mucous membrane is first wiped with a cotton-wool swab and then painted with tincture or iodine. The operator stands in front of the patient and retracts the lip with his left hand. The syringe, held like a pen, is inserted, with the bevel of the needle towards the bone, into the muco-buccal fold, and advanced upwards and inwards until the periosteum a little above the level of the apex of the tooth is reached, 1 to 1.5 c.c. being deposited here.

POSTERIOR SUPERIOR ALVEOLAR OR TUBEROSITY INJECTION

The object of this injection is to block the posterior superior alveolar nerve as it enters its canal about halfway down the zygomatic surface of the maxilla. The area anæsthetised includes the second and third upper molar teeth, the posterior buccal and palatal roots of the first molar tooth, and the outer alveolar plate and gum overlying these teeth. This injection may be made with a short needle on an angle attachment, but the technique I shall describe requires a 42-millimetre needle mounted on a straight hub. The operator stands in front of the patient, who is instructed to half-open his mouth, thus allowing the thorough retraction of the tissues.

The mucosa having been wiped and painted with tincture of iodine, the syringe and needle, held at an angle of 45° to the occlusal plane of the upper teeth, is inserted high up in the buccal sulcus above the posterior buccal root of the second molar and passed slowly backwards, upwards and inwards for about one inch, where 1 to 2 c.c. of the solution are injected. Anæsthesia takes place almost immediately. As the surface of the maxilla in this region is convex, in order to reach the canal it is important to hold the syringe as far externally as the angle of the mouth permits.

Post-operative pain following this injection may be due to scratching the periosteum or infiltration of the external pterygoid muscle, brought about by advancing the needle too far posteriorly.

It is important at the onset of the injection to have the tissues thoroughly retracted; failure in this respect may cause the needle to be inadvertently inserted too far externally, thus infiltrating the suctrial pad of fat which is situated in the molar region, an unsightly swelling of the cheek being the result.

If the syringe is directed parallel with the alveolar plate and not swung externally, a vessel of the pterygoid plexus may be punctured, giving rise to a swelling sudden in onset and alarming to the patient. This hæmatoma may remain for three or four days, after which the effused blood, like ecchymosis elsewhere, will pass through the usual stages of discolouration and will finally be absorbed.

THE INFRA-ORBITAL INJECTION

As you are all aware, the infra-orbital foramen is usually situated above the first premolar tooth about one finger's breadth below the inferior border of the orbit. It will be noticed that the long axis of the canal faces downwards and towards the mid-line. This fact gives us a guide for the direction of the insertion of the needle. The index finger of the left hand is placed over the foramen and the lip retracted with the thumb. The mucous membrane is prepared and a 42-millimetre needle inserted into the muco-buccal fold opposite the canine, and advanced until the needle can be felt by the left index finger; $1\frac{1}{2}$ to 2 c.c. are deposited here, and the solution massaged gently into the canal so as to reach the anterior superior dental nerve.

The area anæsthetised includes the incisors and canine on the side of injection and the mucous membrane and alveolar plate external to these teeth.

After eight or nine minutes, signs of anæsthesia begin to develop. A pronounced numbness on the side of the nose, upper lip and lower eyelid may be felt, due to anæsthetising the terminal branches of the infra-orbital nerve. Drooping of the upper lip on the side of injection frequently occurs, due to infiltration of the temporo-facial division of the facial nerve at the infra-orbital plexus.

Failure to get results from this injection may be due to incorrect location of the foramen, or infiltration of one of the muscles. If the needle is kept too close to the bone the caninus will be infiltrated, whereas insertion too far externally will cause the levator labii superioris to be entered. Soreness and slight swelling are frequently associated with this injection, due in most cases to injury to or infiltration of one of these muscles. The soreness may last two or three days, as absorption of anæsthetic solution in muscular tissue is very slow.

BLOCKING THE SECOND DIVISION IN THE SPHENO-MAXILLARY FOSSA

For multiple extractions or for such operations as the removal of a dental cyst, it may be necessary to block the second division of the trigeminal nerve in the spheno-maxillary fossa. I have had little experience of these injections, but as it is of

interest I will outline briefly the technique devised by Dr. A. C. Smith, which is the one usually adopted.

A 42-millimetre needle is required, with an angle attachment. This is inserted into the mucous membrane at the point of reflection from the gum just behind the third molar. The needle is then advanced in an upward, slightly backward and inward direction, care being taken to keep it close to the bone round the curve of the maxilla, so as to avoid the internal maxillary artery and the pterygoid plexus of veins. No resistance should be felt, and the needle should reach the fossa through the spheno-maxillary fissure.

The spheno-maxillary fossa can be reached through the posterior-palatine canal. Silverman recommended this method, but it is extremely dangerous, as the needle may enter the orbit and pierce the dura mater through the sphenoidal fissure.

THE POSTERIOR PALATINE INJECTION

The anterior palatine nerve runs forward from the posterior palatine canal to anastomose with the naso-palatine nerve opposite the canine. The posterior palatine canal is indicated by a shallow depression which is situated on the palatal mucous membrane opposite the last molar tooth which the patient possesses or possessed, about midway between the neck of this tooth and the mid-line of the palate. The site of the puncture is sterilised in the usual way, and the syringe advanced obliquely from the opposite side of the mouth, the needle being inserted for a depth of 5 mm. into the mucous membrane, where 5 or 6 minims are deposited. More than 10 minims should never be used for this injection, as the discharge of a large quantity of fluid brings about an undesired infiltration of the soft palate, resulting in difficult deglutition.

THE ANTERIOR PALATINE INJECTION

As the papilla through which the needle has to pass is composed of richly innervated fibrous tissue, this somewhat painful injection should only be attempted in those cases which do not respond to an infiltration of the palatal aspect of the individual teeth. It is a wise procedure before inserting the needle to paint the site of the puncture with a surface anæsthetic, such as a 10 per cent. solution of cocaine. The syringe is held parallel to the long axis of the anterior teeth and the needle advanced through the papilla overlying the canal where 9 or 10 minims are deposited.

REGIONAL ANÆSTHESIA IN THE MANDIBLE. MANDIBULAR INJECTION

This injection may safely claim to be the most used and most successful of all the regional injections. We are indebted to it for enabling us to attain complete anæsthesia of the mandible. The object of this method is to block the inferior dental and lingual nerves at a point slightly superior to where the former enters its canal. To attain this object many techniques have been devised, it being largely a matter of personal taste which method one uses, but here I should like to say that I maintain that any technique which is consistently successful and which is based on a thorough knowledge of the anatomical structures is the correct one. If a mandible is examined, a depression will be seen lying behind the third molar tooth and between the external and internal oblique lines. This is the retro-molar fossa, and is of considerable importance as a guide for the insertion of our needle. The mandibular foramen will be observed situated about the middle of the inner surface of the ascending ramus approximately 1 cm. above the occlusal surface of the lower teeth. The needle should approach the foramen through the pterygomandibular space, a triangular area of loose connective tissue, bounded externally by the ascending ramus and internally by the internal pterygoid muscle. Whatever technique is adopted the preliminaries are exactly the same. The left index finger is placed in the mouth and passed backwards towards the ascending ramus until the external oblique line is palpated at the level of the occlusal surface of the lower teeth. The finger is now given a quarter turn so that the ball of the finger rests in the retro-molar fossa, the tip of the finger nail coming into contact with the internal oblique line. The finger is drawn slightly outwards and the needle inserted close to the finger nail about 1 cm. above the occlusal surface of the lower teeth. The technique which I shall describe is the one which I consider to be the simplest and which is likely to cause the least damage in inexperienced hands. The mucous membrane is painted with tincture of iodine and the guiding finger inserted as explained above. The syringe, mounted with a 42-millimeter needle, is held parallel to the occlusal surface of molars, and the needle advanced through the overlying soft tissues for a distance of about 4 mm. A few drops of solution may be deposited here to anæsthetise the lingual nerve. Stedman, however, states that this is not necessary, as the lingual nerve lies close to the inferior dental nerve as it enters the canal and is therefore reached here. The syringe is now brought across the mouth so that the barrel is lying between the canine and the premolars, and

is advanced until the internal surface of the ramus is felt, 2 cc. of the solution being deposited just above the lingula.

The mandibular injection is productive of more post-anæsthetic complications than any other, most of which are due to a faulty knowledge of the anatomical structures.

Insertion of the needle too far medially will cause the solution to be carried into the internal pterygoid muscle, or even into the superior constrictor of the pharynx. Difficulty and pain in swallowing will be the result. The anterior border of the masseter has been mistaken for the external oblique line and the needle inserted too far laterally. This error will be avoided if care is taken to locate correctly the landmarks which Nature has provided for us before commencing the injection.

A state of false ankylosis which sometimes occurs is caused, according to Mendel Nevin, to the anæsthetising of the motor nerve endings of the internal pterygoid or masseter muscles, which results in their losing their normal function of elevating the mandible.

Temporary facial paralysis and drooping of the upper lip and lower eyelid are the result of allowing the needle to be advanced beyond the posterior border of the mandible into the parotid gland, where the solution has blocked the cervico-temporal or cervico-facial branches of the facial nerve.

To eliminate this complication, if bone has not been struck after three-quarters of the needle has been buried, the latter should be withdrawn entirely, and a fresh start made, carefully checking up on one's technique. If bone still cannot be felt, it may be necessary to change the needle for a longer one, as the width of the ramus varies considerably.

In order to obtain complete absence of pain during operations in the molar region of the mandible it may be necessary to anæsthetise the long buccal nerve which supplies the mucous membrane in the molar region. This is done by injecting 1 cc. into the buccal sulcus opposite the second molar tooth.

MENTAL INJECTION

This is not a very reliable injection, as it is not always easy to find the foramen, and, even if it is found, anæsthesia does not always follow. As a rule, the foramen is to be found just below the apices of the lower premolars. If it can be palpated it is fixed by the index finger of the left hand. The thumb of the left hand retracts the lip and the needle is inserted into the mucous fold between the first and second premolars and guided down until the entrance of the canal is found, 1 cc. of the solution being deposited here and gently massaged into the canal.

Under the headings of the various injection techniques I have dealt with the complications which may occur due to lack of knowledge of the anatomical structures and faulty technique. Unfortunately, there still remains a rather formidable list of complications. These may be tabulated as follows :—

1. Toxic symptoms.
2. After-pain.
3. Swellings.
4. Broken needles.
5. Failure to produce anæsthesia.

TOXIC SYMPTOMS

These, although alarming, are seldom serious. They may be caused by the adrenalin content, as this drug may produce an intensely toxic reaction, but in the large majority of cases, syncope is due to fright, worry, or lack of food.

To obviate these conditions, timid patients should be given a nerve sedative such as allonal, 5-10 grains, to be taken an hour or so before the operation, and all patients should be instructed to eat a good meal beforehand. If signs of faintness manifest themselves, the patient's head should be lowered and a dose of sal volatile given. In most cases the patient will recover rapidly ; if, however, there is no response to this treatment, it may be concluded that syncope is due to adrenalin intoxication. The treatment now consists in placing the patient in a recumbent position, keeping him warm, and administering a cardiac stimulant, such as brandy.

AFTER-PAIN

Here it is necessary to differentiate between the pain caused by the trauma of the operation and that due to the injection. The former cannot altogether be dispensed with, but with a little care and attention to detail the latter may be reduced to a minimum. Hypertonic or hypotonic solutions or those with an acid reaction should be avoided, and blunt or bent needles should never be used. Pain may be due to scratching or tearing the periosteum, or infection introduced through failure to adhere to the rules of asepsis.

SWELLINGS

The damaging of structures, thereby producing inflammation, is the most common cause of œdema. These swellings are accentuated owing to the contraction of the vessels, by adrenalin preventing the absorption of the serous exudate.

FAILURE TO PRODUCE ANÆSTHESIA

In an article on this subject, Dr. Gaston Labat states that "The presence of some anæsthetic fluid in a human body is not always followed by anæsthesia, but its presence in the correct place will never fail to produce the desired result."

This, no doubt, is true up to a certain point, but it is not in accordance with the views of other authorities who believe that there are a few isolated cases on which novocain makes no impression, whatever type of injection is used.

BROKEN NEEDLES

This accident only takes on a serious aspect when the fractured end is completely buried in the tissues. These unfortunate occurrences will be reduced to a minimum if a rule is made never to insert the needle for more than three-quarters of its whole length, so that if fracture does occur a portion will be left protruding through the tissues which can be easily removed.

More needles are broken in the mandibular injection than in all the other injections together; care, therefore, should be taken to warn the patient not to jerk his head suddenly, and to see that no lateral pressure is brought to bear on the needle.

In conclusion, Gentlemen, local anæsthesia is the greatest weapon we possess to combat pain. It is therefore up to us to so perfect our technique that we may dispel the dread with which the dental chair is looked upon by most of our fellow men.

Correspondence

The Biennial Dinner

To the Editor of the GAZETTE

SIR,—I almost hesitate to send you a criticism of such a popular and efficiently conducted function as the Guy's Biennial Dinner, but, as one of the younger men who hope to be present, I should like to suggest to the organisers that the price of the dinner be reduced.

I realise that its cost must be increased by such necessary expenses as printing of notices, etc., but I do respectfully suggest that fourteen shillings, exclusive of wines, does prevent some people from attending.

Yours, etc.,

"S."

Epsom Downs.

Vacation Tours to U.S.S.R.

To the Editor of the GAZETTE

SIR,—It may be of interest to your readers to know that this year there will again be vacation tours arranged for students and medical men to visit the U.S.S.R.

Last year the tours proved to be of exceptional interest, as they included, along with holiday pursuits, facilities for visiting many new and strange medical institutions. Further, a very considerable insight was gained into the workings of a modern and, in many respects, unique health organisation.

The tours include a 4½-day voyage via the Kiel Canal and Baltic Sea to Leningrad, and 12 days in Russia itself.

Particulars regarding expenses, dates of departure and travelling conditions can be obtained by writing to Miss H. Browning, The Society for Cultural Relations, 21, Bloomsbury Square, W.C.1.

Yours, etc.,

E. DUNSTAN.

Guy's Hospital,
S.E.1.

Chinese Publicity

To the Editor of the GAZETTE

SIR,—I enclose a "Trade Circular" recently received by me. Had the old *Guyoscope* been still alive I should have forwarded it to the Editor of that famous journal.

Yours, etc.,

C. H. BRANGWIN.

Box 5,
Swatow, China.

KUAN YUAN HENS REARING GROUND

Fresh Leghorn Hens Eggs Explanation

It is well known that egg is the best food, and the best egg is which laid by a Leghorn hen. But it must be fresh and of the best quality, for a good Leghorn egg contains the properties of phosphorus, calcium, magnesium, iron, nitrogen, oxygen, hydrogen and carbon, the eight important material elements and vitamine to human body. We rear Leghorn hens by a new scientific way, and our eggs are the best in market, which are so nourishing to human body, and not the common eggs can be compared with. We may explain some of their prominent points in the following :—

1. According to new scientific way, we use rice powder, flour bran, grains, vegetables, potatoes, beef-crumbs, fish-crumbs, shrimp-crumbs, cow-bone-dust, and cod liver oil for our hens' food which causes the eggs contain rich and nourishing material elements.

2. We use proper basins to hold our hens' drinking water which we disinfect once and change thrice daily, which causes no impure fluid in our egg (egg contains more than 70 per cent. water).

3. We constructed porper basins sheds for our hens, and pay more attention to the flock's health ; as, the cleanness of the sheds, giving purgative to the hens weekly to purge their bowels. Our hens are so healthy, and never affect with any disease, and the eggs laid by them are therefore guaranteed no microbe.

4. Those sheds have skillfully been constructed according to the up-do-date style which are mostly airy and spacious, and are proved to be satisfactory for the flock's residence. It is for this reason that the animation of our hens have always been found prosperous, and the eggs which laid by them are recognised to be of perfect and nourishing.

5. We keep our hens from cocks, and their eggs receive no semen, and would not hatch or become rotton under a warm weather. We also send them out to market directly, and so they are guaranteed always fresh.

6. Owing to the supesiority of our hens' derivation, both the size and weight of every egg is proved to be exalted above those that are being sold in the common market, of which, however, we further guarantee to possess the most nutritious substances.

From the above explanation, our customers would easily find our eggs are quite different with those common ones in the market. For their hens are not properly reared, no proper food to feed, proper shed to keep, let shem drink impure water, keeping with the cocks, paying no attention to their health. Their eggs are not nourishing and always contain with impure substances, and harmful microbes. For the above explanation, we heartily beg our customers will pay attention to it.

Kuan Yuan Hens Rearing Ground,
Goh Chung,
Kak-chiek,
Swatow, China.

(No effort has been made to correct original mistakes in the type of the circular.—Ed.)

Guy's Hospital Ladies' Association

THE Annual General Meeting of the Guy's Hospital Ladies' Association was held in the Court Room of the Hospital on Monday, April 29th. The Chair was taken by Mr. Davies-Colley. Lady Shipway, the Hon. Treasurer, presented a very satisfactory statement of accounts for the year.

The endowment of certain beds and cots in Victoria Ward had been completed or inaugurated from the ordinary annual income ; the Association had completely endowed No. 15 bed in Victoria Ward from the proceeds of the Garden Fete, also Bed No. 16 and Cot No. 16, from the proceeds of the " Ball of the Future." Mrs. Stuart-Menteth supported the adoption of the Treasurer's Report.

The Hon. Secretary, Mrs. Frank Cook, presented the report of the Association for a successful year. The adoption of this report was ably proposed by Mrs. Stewart, President of the Dulwich Branch, and seconded by Lady Hale-White.

Mrs. Fawcett, Mrs. Mollison and Mrs. Messenger were unanimously elected to serve on the Executive Committee.

Mr. Davies-Colley in a most interesting address referred to the associations of his family with Guy's, and compared the surgical adventures of fifty years ago with the routine procedures of to-day.

The Treasurer of the Hospital, Mr. F. P. Whitbread, in optimistic vein threw bouquets to the Ladies' Association.

The Matron endorsed the Treasurer's sentiments, and appealed for comfortable dressing gowns amongst other garments.

The Chairman of the Association, Lady Ebbisham, proposed a vote of thanks to Mr. Davies-Colley and commiserated with him as the neglected husband of an enthusiastic former Secretary.

An excellent tea was provided in the Nurses' Home, by kind permission of the Matron.

Sport

Rugby

THE season of 1934-35 being completed, I have pleasure, as in past years, in enclosing chart and statistics of the 1st XV. It has been a disastrous season from a record point of view, and I am unable to trace any record of a previous season when we have had 500 points scored against us.

The percentage, 35 per cent., is also the lowest since the War. We were also unsuccessful in the Cup, Bart.'s beating us in the first round. St. Mary's are to be congratulated on their success again this past season.

While the above is gloomy reading, all clubs have their " ups and downs " ; next season may be one of the " ups " seasons.

A fact that the Hospital may well be proud of is that the past season was the 91st season.

We are the oldest London " rugger " side, and one of the oldest sides in the country with a continuous existence, and " rugger " traditions have been well upheld by Guy's.

On the question of records, I should like to recall the season of 1921-22, when we won 19 out of 27 games, scoring 600 points against our opponents' 96.

To return to the past season ; of the programme of 32 games arranged, 33 with the Cup match against Bart.'s, 30 were played, the matches *v.* Catford Bridge and Northampton at Honor Oak Park and Cambridge University at Cambridge being scratched owing to hard grounds.

Our opponents crossed our line in every game ; we, however, failed to cross our opponents' line on five occasions, *i.e.*, *v.* Coventry (A.), London University (A.), Rosslyn Park (A.), Blackheath (H.) and Bedford (H.).

The highest number of points scored against us in a game was 49 by Cambridge University, while our highest score was 33 against the Old Alleynians.

The latter part of the season was particularly disastrous, we lost the last eight games in succession, had 177 points scored against us, and replied with only 40 points.

Season 1934-5

The following have taken part in 1st XV matches during the season :—

Darke, Hale-Monro, Steytler (28), Davies (24), Kark, Wright (23), Alexander (22), Fletcher, Hopkins (21), Stanyon-Jaques (20), Sharpe (19), Giesen, Stewart, Yerbury (17), Gregory (15), Van der Merwe (13), Ziervogel, Bowles (12), Fichardt, Crabb, Clarke (9), Robins, Heberlein, Dick (8), Frazer, Forbes, Rees (6), Llewellyn (5), Crampton (4), Atkins, Birks (3), French (2), Chapman, Coats, Harrington and Whitteridge (1) each.

The following have scored tries :—

Wright (14), Giesen (10), Alexander (9), Fletcher (7), Gregory (6), Stanyon-Jaques (5), Dick, Stewart (3), Steytler, Fichardt, Bowles (2), Hale-Monro, Ziervogel, Birks, Frazer, Darke and Harrington (1) each.

The following have scored goals :—

	Tries Converted.	*Dropped Goals.*	*Penalty Goals.*
Alexander	20	—	4
Giesen	4	1	2
Kark	1	—	2
Dick	1	—	—

making a total of 69 tries, 26 tries converted, 1 dropped goal, 8 penalty goals. Total points, 287.

Our opponents' score was as follows :—

118 tries, 54 tries converted, 5 dropped goals, 12 penalty goals. Total points, 518.

Therefore the completed figures are :—

Played 30, won 10, drawn 1, lost 19. Total points for, 287 ; total points against, 518. Average points per game (for), 9.56 ; average points per game (against), 17.26 ; percentage, 35.00.

The following table gives the records from Season 1920-21 :—

Season.	*P.*	*W.*	*D.*	*L.*	*Points. F.*	*A.*	*Per cent.*
1920-21	27	19	2	6	600	96	74.07
1921-22	35	26	2	7	467	162	77.0
1922-23	32	19	4	9	343	203	65.62
1923-24	27	13	3	11	285	151	53.4
1924-25	31	16	3	12	291	230	56.45
1925-26	29	14	3	12	235	234	53.5
1926-27	34	18	3	13	371	294	57.35
1927-28	26	12	3	11	190	206	52.0
1928-29	30	11	1	18	220	404	38.3
1929-30	28	12	1	15	322	311	44.7
1930-31	28	13	2	13	306	289	50.0
1931-32	28	14	0	14	295	324	50.0
1932-33	30	14	1	15	374	347	48.3
1933-34	32	14	2	16	355	373	46.87
1934-35	30	10	1	19	287	518	35.0

ROY C. HOLLOWAY,
Hon. Life Member, G.H.C.U.

GUY'S HOSPITAL R.F.C.

SEASON 1934-5

91st Season

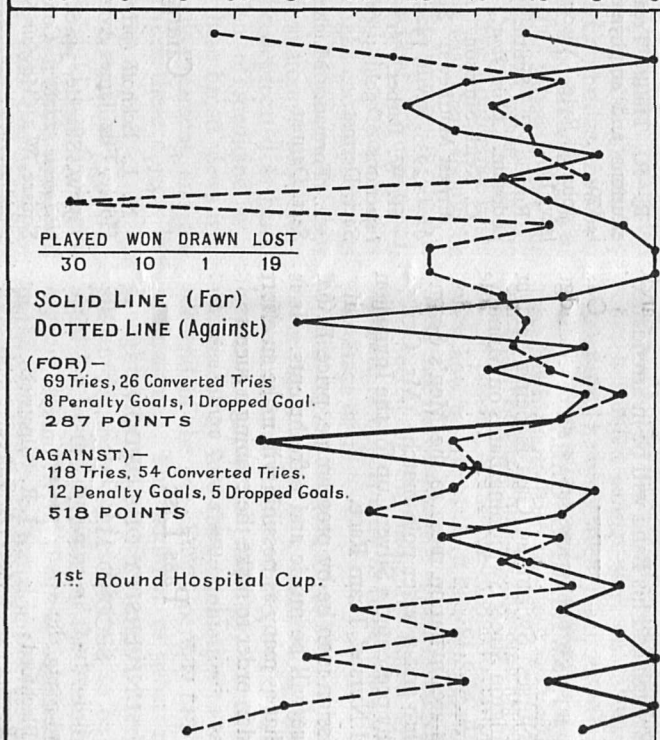
Percentage 35%

(For) Total Points **287**

Average Points per Match **9·56**

(Against) Total Points **518**

Average Points per Match **17·26**



Indicates Penalty Goal +
Indicates Dropped Goal Φ

OPPONENTS		DATE	Gd	SCORE Points For F	A	For G	For T	Against G	Against T	GOALS	TRIES
Gloucester	L	1934 Sept 22	A	11	37	2+	1	5+Φ	5	Giesen, Alexander+	Wright, Fletcher.
Coventry	L	" 29	A	-	22	-	-	2	4		
United Services	W	Oct. 6	H	16	8	2	2	2+	-	Alexander 2.	Giesen 2, Wright, Alexander.
Old Blues	W	" 13	H	21	14	3	2	1	3	Alexander 2, Kark.	Giesen 2, Wright, Bowles, Fletcher.
Old Whitgiftians	W	" 20	H	17	11	2+	3	1	2	Giesen 2+	Giesen 2, Darke, Fletcher.
Harlequins	L	" 27	H	5	10	1	-	2+Φ	1	Giesen.	Alexander.
Aberavon	W	Nov. 3	H	13	6	3+	-	1+	1	Alexander 3+	Giesen, Bowles.
Cambridge Unv.	L	" 7	H	9	49	1+	2	10Φ	-	Alexander+.	Wright, Alexander.
Birkenhead Park	L	" 10	H	3	9	1+	-	-	3	Alexander+.	
London Unv.	L	" 14	A	-	19	-	-	3+	2		
Rosslyn Park	L	" 17	A	-	19	-	-	2	3		
Old Leysians	L	" 24	H	8	13	1	1	2	1	Alexander.	Wright, Stewart.
United Services	W	" 28	A	30	11	3	5	1	2	Alexander 3.	Wright 3, Fletcher 2, Alexander, Gregory, Stanyon-Jaques.
Richmond	L	Dec. 1	H	6	12	-	2	-	4		Stewart, Fletcher.
Army	W	" 8	H	14	9	2+	2	-	3	Giesen, Kark+.	Wright 2, Giesen.
Coventry	W	" 15	H	6	3	-	2	-	1		Alexander, Stanyon-Jaques.
London Scottish	D	" 22	A	8	8	1	1	2+	-	Alexander.	Alexander, Giesen.
Old Alleynians	W	" 29	H	33	17	4+	5	2+	3	Alexander 3, Giesen+.	Gregory 4, Wright 2, Giesen, S-Jaques.
Old Merchant Taylor S.	W	1935 Jan. 5	A	16	15	2Φ	3	3+Φ	1	Giesen Φ, Kark.+	Wright 2, Stanyon-Jaques.
Birkenhead Park	L	" 12	A	5	17	1	-	1	4	Alexander.	Steyler.
Bedford	L	" 19	A	8	24	1	1	3	3	Alexander.	Alexander 2.
Gloucester	W	" 26	H	18	8	3	1	2+	-	Alexander 3.	Dick, Fichardt, Hale-Monro, Fletcher.
Aldershot Services	L	Feb. 2	H	11	13	1	2	2	1	Alexander.	Alexander, Ziervogel, Stewart.
Barts Hospital	L	" 7	R	3	7	-	1	1Φ	1		Stanyon-Jaques.
Aberavon	L	" 9	A	8	25	1	1	2	5	Dick.	Dick, Steyler.
Old Millhillians	L	" 16	A	3	17	-	1	2+	3		Birks.
Blackheath	L	" 23	H	-	29	-	-	5+	2		
Old Cranleighans	L	Mar. 2	H	9	16	-	3	3+	1		Fichardt, Frazer & Gregory
Bedford	L	" 16	H	-	31	-	-	5	2		
Northampton	L	" 30	A	6	39	-	2	6	3		Dick, Harrington.

Hospital Information, etc.

Notices

BEANEY SCHOLARSHIP IN MATERIA MEDICA

The Beaney Scholarship in Materia Medica (including under that term Pharmacy, Pharmacology and Therapeutics) is now vacant. The Scholarship, which is open to candidates who have received part, at least, of their medical education at Guy's Hospital, is of the annual value of £60 and is tenable for three years.

Further particulars may be obtained from the Dean, to whom applications must be addressed at Guy's Hospital Medical School, London Bridge, S.E.1, not later than May 27th, 1935.

GUY'S HOSPITAL MUSICAL AND OPERATIC SOCIETY

A Dance will be held at the Westminster Palace Rooms on Friday, May 24th, from 9 p.m. till 2 a.m. Mrs. Eason has very kindly consented to act as hostess. The tickets are priced at 7*s.* 6*d.* single and 12*s.* 6*d.* double, and may be obtained from the Committee—Sister Parkins, Nurse Palmer-Roberts, R. H. Blazeby, W. Howard Clarke, W. Hughes, Frank Rogers—and at the Wills Library.

Jack Brough and his Band will be in attendance.

SWIMMING GALA

The Nurses' Swimming Gala is being held at the Lavington Street Swimming Baths on Monday, May 20th, at 8.15.

There are invitation races to the Men's Swimming Club and a water polo match. Mr. Ogilvie has kindly presented a Silver Cup for the Invitation Hospital Nurses' Team Race.

Admission is to be by programme, price 1*s.* 6*d.* and there will be music and refreshments. It is hoped that as many as possible will make an effort to attend in order to make the evening a success.

Pass List

UNIVERSITY OF LONDON.

SECOND M.B., B.S.

PART II.

A. A. Beazeley
R. D. Blachford
L. H. Boyd
W. E. W. Bridger
C. N. Brown
R. V. Coxon
J. J. Davis
A. M. Edwards
P. G. Epps
W. Fine
E. S. Foote
P. A. Gardiner
G. N. L. Godber
S. Green
M. A. Imray
J. R. Kilpatrick
A. S. Lee
I. J. Mathias
K. G. Pascall
C. Phillips
R. Rhydwen
A. T. M. Roberts
H. D. Smith
H. Stoll
J. A. F. Tobin
R. A. R. Topping
D. S. Wilson
R. O. Yerbury

SOCIETY OF APOTHECARIES OF LONDON.

FINAL EXAMINATION.

April, 1935.

Forensic Medicine.

N. O. Lucas
A. Ponder

Midwifery.

P. D. Lynch.

UNIVERSITY OF CAMBRIDGE

SECOND EXAMINATION FOR MEDICAL AND SURGICAL DEGREES.

Easter Term, 1935.

PART III.

Pharmacology and General Pathology.

O. P. Llewellyn
H. R. Loughran
J. R. Oliver
R. G. Ticehurst

Papers by Guy's Men

R. R. Traill. Treatment of tuberculous pleural effusions and emphyemata. *Brit. Med. Jour.*, 1935, i, 870.

John A. Ryle. Visceral neuroses. *Clin. Jour.*, 1935, lxiv, 177.

Ronald E. Smith. The causation of erythema nodosum. *Clin. Jour.*, 1935, lxiv, 195.

C. Keith Simpson. Air embolism. *Ibid.*, 205.

Ernest Matthews. Silicate cements. *Proc. Roy. Soc. Med.*, 1935, xxviii, 742; Sect. Odontol.

H. W. Barber. (1) Pityriasis rosea (? modified by injections of gold); (2) Pityriasis rosea. *Ibid.*, 732; Sect. Dermat.

L. Forman. ? Lichen scrofulosorum. *Ibid.*, 736; Sect. Dermat.

Change of Address

N. L. Eckhoff (private address), 151, North End House, Fitz James Avenue, W.14.

J. W. Shackle, 34, St. John's Wood Terrace, N.W.8 (*Primrose* 2728); Consulting Room—71, Grosvenor Square, W.1 (*Mayfair* 6080).

EDS. { D. P. K. / P. W. C.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX *25th May* 1935 *Number* 1222

PASSIM

IT was on Tuesday, May 14th, that our enterprising colleagues from University College Hospital organised a debate on the medical curriculum at the B.M.A. House. The motion, on which only unqualified students were allowed to speak, was " That the inadequacy of medical education lies in the curriculum." Of the three deans who attended the meeting the Dean and Sub-Dean of Guy's were two. " But the meeting," says the *Lancet* report, " ended in a note of hopelessness in the prospect of change."

" We lift up our eyes unto the hills : from whence cometh our help ? " And from the dizzy heights of the examining boards of the Universities of England the manna falls at our feet.

The medical curriculum Conference instigated by the University of London and formed by representatives from Oxford, Cambridge, the Royal Colleges and the Society of Apothecaries, has at last published its report. The following are the chief recommendations that they make for the revision of the curriculum. The Conference bases its suggestions on the views that there should be as high a standard of general education as possible with regard to reasonable length of the curriculum, and that the method of dividing medical studies into a series of such watertight compartments as the pre-clinical and clinical periods with their watertight subdivisions of anatomy, physiology and pathology, etc., is to be deprecated as being inconducive to a conception of medicine as a harmonious whole. With these broad views it is unlikely that there can be disagreement, and the Conference proposes to further these objects by the following specific measures.

It is suggested that medical studies proper—anatomy and physiology—should not be begun before the age of eighteen. With this we are in complete accord. Together with this we agree with the recommendation that the syllabuses of the basic sciences, physics, biology and chemistry, of the varying examining bodies, should be brought more into line with one another with a view to reconciling the difficulties of schools in teaching for the different requirements of such varying Boards.

The third suggestion of importance is that there should be a means of obtaining exemption from the First M.B. by a higher school certificate examination in which, in addition to the three basic scientific subjects, a subsidiary non-scientific subject should be taken. At the present moment, the student who has passed his matriculation is confronted with the alternative of delaying his qualification a year by staying at school, or plunging immediately into medical studies at the expense of his general education. The object of the proposed measure is presumably an attempt to reconcile these opposing demands of time and intellect, and it is a corollary of the first recommendation that since a student cannot start on medical studies proper until he is eighteen, his time will tend to be spent in some greater measure of general education than has hitherto been the case, or than would be the case if he left school and devoted his time solely to the passing of the pre-medical examinations as they now stand. It will be seen that very little difference in the standard of general education may be effected by this measure, but it gives some measure of opportunity to those who care to take advantage of it.

With regard to medical studies proper, there is to be an attempt at a harmonious blending of pre-clinical and clinical studies by the introduction of the principles of pathology, bacteriology and pharmacology into the examination to be held at the end of the pre-clinical period, *i.e.*, after the sixth term. The addition of what might be thought to be the last straws on the overburdened student by these extra subjects is to be compensated for by the abolition of the examinations in organic chemistry and pharmacology ; knowledge of the former is to be tested in the examination in physiology and of the latter in the final examination in medicine.

So far the report has been encouraging enough, though effecting so little that one is tempted to

wonder on what deliberations the conference has spent its three years. But there is further evidence that the scales are falling from our professors' eyes. The whole concepts of the teaching of anatomy and physiology are to be revised. These are to be taught as parts of a general training, as applied rather than as academic subjects. Though at the end of the dissection of an anatomical part the student will be expected to have mastered the minutiæ, there is to be a reduction in the knowledge of anatomical detail required in the examination at the end of the second year of medical studies. In the same way the finer points of physiological instruction are to be sacrificed to tuition in the use of the stethoscope, laryngoscope, otoscope (and doubtless the rhinoscope and proctoscope).

A noteworthy advance is that even as early as the second year the student is to be introduced to the study of medical psychology, and increased emphasis is to be laid on this subject during the clinical period.

It remains to discuss the final examination. For this, three reforms are suggested. The first is that the examination should be divided into two parts—the first to consist of medicine, surgery and pathology; the second of obstetrics, gynæcology, pædiatrics, public health and State medicine. The second reform is that the final examination should be conducted by a Board on which there are to be representatives of such specialties as eyes, ears and orthopædics; while the third is that more time should be devoted to the *viva voce* and clinical parts of the examination than is now usually the case. The Conference has felt that it is undesirable that examinees should gamble, as at present they undoubtedly do, on not getting eye or ear cases in their clinicals. Although this may sound superficially alarming, the Conference proposes to protect our interests by insisting on close co-operation by the Board of Examiners to prevent undue specialisation in the questions asked.

That the relative importance of the clinical part of the examination should be increased seems to us also reasonable, but the experiences of many examinees might well prevent them from giving unqualified agreement. These parts of the examination are always the most exhausting to the examiner, and if a quarter, or even a tenth part, of what we hear of the Conjoint Board can be true, then candidates are too often submitted to scant consideration or even gross discourtesy from a presumably tired examiner. If the length of the *viva voces* and clinicals be increased, then the Conference might consider recommending the appointment of some sort of referee to protect the interests of the examinee from overworked and petulant interrogators.

It should be noted that, though both parts of the final examination may be taken together, Part II may not be taken prior to Part I, nor will a candidate be deemed to have passed Part II until he has satisfied the examiners in Part I, which may be taken separately. The combination of the inseparable subjects of medicine, surgery and pathology into an indissoluble trinity must be a desirable one, but the desirability of combining obstetrics, gynæcology and pædiatrics with public health and State medicine seems less assured. The Conference says that to a certain extent the recently qualified practitioner is a consultant to public bodies on public health and State medicine. We feel that with rare exceptions this extent is very small—sufficiently small to justify the existence of a separate examination in this subject.

The public will, in all probability, welcome a change which causes the examination in obstetrics and gynæcology to be the last undertaken by the student before qualification, though it is to be doubted if it will have any effect on improving obstetrical technique. The medical student does not, perhaps, realise with what alarm the public views the present maternal mortality rate, nor how far this alarm is justified. The well-known 1930 report of the departmental committee of the Ministry of Health showed that in an analysis of 1,596 cases 626, or 39 per cent., a "primary avoidable factor" was present, and in 35 per cent. of these cases (or about 13 per cent. of the total number of deaths) this factor was an error of judgment in the management of the case on the part of the doctor or midwife. We feel that any reform that may tend, however slightly, to lessen such a surprisingly high mortality rate is to be welcomed.

The report ends by expressing the hope that in the near future there will be enough house appointments for newly qualified men, in hospitals throughout the land, to enable making the six-monthly tenure of such an appointment a statutory obligation.

The recommendations of the Conference, viewed as a whole, strike us as forming a significant advance in the conception of medical training, and there can be no doubt that they are based on more rational principles than the present system of education. There is one point on which we seek information, and that is with regard to the proposed examination by which exemption can be obtained from the First M.B. In what way, if any, is this to differ from the present Higher School Certificate?

The only finding with which we are tempted to disagree is the recommendation that Public Health and State Medicine should of necessity be included in the final part of the final examination. Further-

more, there seem to us to be two reforms now long overdue that might well have been added to the findings of the Conference. In our view, it would be wise if greater stress were laid on the principles of physical chemistry at the expense, if necessary, of the studies of organic and inorganic chemistry; and of importance with regard to the saving of time is the question of instruction in botany. We have long wondered what benefit the members of our own staff have derived from their one-time intimate knowledge of the life history of *lupinus lupinus* (the common lupin) and the methods of pollination—if any—of *ranunculus bulbosus*. One supposes that this examination is an archaic survival from days when drugs were made only from plant extracts, and we suggest that the study of botany should in future be confined to consideration of the protozoa.

It remains for us only to hope that these admirable recommendations may come into force in time for the benefit of our sons or our sons' sons.

▭

ON Wednesday the 15th of May the Residents' Going-Off Dinner was held. This was the first dinner since the redecoration of the Residents' room and the purchase of a new piano.

The walls remain unsullied and the piano, we understand, can still be played. We congratulate the off-going President, Mr. T. E. Howell, on his skill in diverting attention from them in the presence of much excessive post-prandial exuberance.

We should like to congratulate Mr. W. H. Hamilton on his election as President and Mr. H. Cameron on his election as Vice-President of the Residents.

Obituary

ROBERT BASIL STAMFORD, Esq., F.R.C.S.(Ed.)

(Reprinted from the "B.M.J.")

THE sudden passing of Mr. Robert Basil Stamford while in active practice at Loughborough has left a gap in the profession in that town which will be difficult to fill. Educated at Repton School, he entered Guy's Hospital in 1890, and at once gained a place in the cricket eleven, which at that time was a very powerful side. He also played Association football for the Hospital. After a very good record as a student at Guy's, he acted as house-surgeon to Sir W. Arbuthnot-Lane. When the South African War broke out he was one of the first civilian surgeons to offer his services, and, after serving for one year, he contracted a severe attack of enteric fever, and was invalided home.

In 1901 he became F.R.C.S.(Ed.), and joined the late Dr. Eddowes at Loughborough, where he practised until his death. He was an active member of the British Medical Association, and had been chairman of the Leicester and Rutland Division, a past president of the Leicester Medical Society, and for many years a member of the Leicestershire Panel and other committees. In 1908 he received the King's Commission *à la suite* to act on the staff of the 5th Northern General Hospital, and on the outbreak of war was called up. He continued to serve during the duration, and did very valuable work as a surgeon. In December, 1919, he married the widow of the late Edward Cunliffe Owen. There was no issue of the marriage.

Tall, elegant, of soldierly appearance, a fine sportsman in many branches of sport, he was very popular, and it is not too much to say that he was beloved by all classes; and though this is not usually the highest praise which can be given to a man it was true of Stamford in every sense of the word. Of especially charming manners and a very agreeable disposition, he had at the same time a mentality which showed a character of great decision in medical and other matters. He was a very capable surgeon, and his opinion was frequently sought by his colleagues in the town and neighbourhood.

R. H. F.

NURSE STEVENS

MANY Guy's men of an older generation will hear with great regret of the death of Nurse Stevens, for many years Staff Nurse in Philip Ward. Nurse Stevens entered Guy's as a Probationer in 1879, and on completion of her three years' training was a Staff Nurse till she retired to take up private nursing in 1906. Generations of house physicians will remember with gratitude what they learnt from her. She had an uncanny faculty of knowing when a patient was admitted whether he was seriously ill or not, and her prognosis as to whether a patient would recover or not was almost unerring. She was admitted by all to be the best nurse for a bad case of typhoid that one could possibly have, and typhoid in those days was a disease for which careful and skilled nursing was everything. It is interesting in these days to remember that in Nurse Stevens's day there was a hospital regulation that not more than five cases

of typhoid were permitted to be in any ward at any one time. Now typhoid is so rare that its diagnosis presents some difficulty to the modern generation of house officers.

Nurse Stevens also had that priceless gift of being able to teach house physicians without their realising that they were being taught. The fortunate house officer who had Nurse Stevens as his Staff Nurse and Miss Oxford (Sister Philip) as his Sister, with her shy way of talking and her twinkle and her blink, knew that if he was in any anxiety or doubt about a case they could help him a great deal in the diagnosis, give him many valuable hints as to treatment, and finally tell him almost with certainty what chances the patient had of recovery.

Nurse Stevens died on May 3rd, and was buried at Ventnor on May 8th.

Disorders of the Gall-Bladder

A Clinical Lecture by Dr. A. F. Hurst, F.R.C.P.

GENTLEMEN,—Careful analysis of the history given by patients upon whom he had operated for gallstones led Moynihan in 1908 to describe for the first time what he termed the "inaugural symptoms of cholelithiasis." It has gradually become recognised that these symptoms are not caused by the gallstones, but by the cholecystitis which accompanies them and precedes their development. Their true nature is still rarely understood, and they often masquerade under some such diagnosis as nervous or flatulent dyspepsia. The severe forms of chronic cholecystitis which can be recognised by simple inspection at operation were naturally the first to be studied, but the investigation of patients with comparatively slight chronic indigestion has shown that there is a form of " medical cholecystitis " which is very much more common than the type calling for surgery. Chronic cholecystitis is a condition which is not only important in itself as one of the most frequent causes of chronic dyspepsia, but it is also important as being the chief predisposing cause of gallstones.

Though it has long been known that *B. coli* may infect the gall-bladder, it is only since 1919, when Lyon, of Philadelphia, showed how Meltzer's discovery that the introduction of magnesium sulphate into the duodenum caused the gall-bladder to discharge its contents could be applied clinically, that *B. coli* cholecystitis has become recognised as being as common a disorder as *B. coli* pyelitis and cystitis.

ROUTE OF INFECTION

The colon bacillus normally inhabits the colon and lower part of the ileum. There are several channels by which it might theoretically gain access to the gall-bladder.

1. Typhoid bacilli pass from the intestines by the lacteals to the mesenteric glands, from which they are conveyed by the lymphatics to the thoracic duct and thence into the general circulation, a typhoid septicæmia being thus produced. The bacilli pass from the blood into the bile and urine, but cholecystitis and pyelitis only develop in a comparatively small proportion of cases. There is no doubt that *B. coli* can pass through the healthy bowel wall, but under ordinary conditions it gets no farther than the lymphatic glands, which act as a very efficient filter, and there is no evidence that acute *B. coli* cholecystitis, corresponding with acute *B. typhosus* cholecystitis, ever occurs, or that chronic cholecystitis is ever preceded by a *B. coli* septicæmia. Even in ulcerative colitis, in which the inflamed and ulcerated mucous membrane of the colon might be expected to permit the easy passage of bacteria into the general circulation, neither septicæmia nor cholecystitis occurs.

2. The portal vein would seem a likely channel for the passage of *B. coli* to the liver and thence in the bile to the gall-bladder without gaining access to the general circulation. But the blood in the portal vein is normally sterile, and remains so even when the wall of the bowel is damaged, and bacteria injected into the portal vein of animals are not excreted in the bile. In suppurating pylephlebitis, the only condition in which severe infection of the portal vein takes place, there is no evidence that the infecting organisms are excreted in the bile, and it is not as a rule complicated by cholangitis or cholecystitis.

3. It has been suggested that cholecystitis is the result of infection with strains of streptococci having a special affinity for the gall-bladder, which are conveyed to it by the cystic artery from infected teeth, tonsils and other foci. But infection of the gall-bladder with streptococci is very much less common than with *B. coli*, and later investigations have failed to confirm the experiments upon which this theory was based.

4. Most cases of cholecystitis are probably due to an ascending infection from the duodenum. The duodenum is normally sterile, but in achlorhydria large numbers of *B. coli* are always present, and less frequently streptococci. Achlorhydria is found in over 25 per cent. of cases of gallstones. In the acute gastritis which occurs in food poisoning and influenza and other infections achlorhydria

is generally present, although it is only likely to persist in individuals with constitutional hypochlorhydria. But observations after perforation of gastric and duodenal ulcers show that the stomach and duodenum are invaded by organisms ascending from the colon within a few hours of the appearance of the achlorhydria caused by sympathetic inhibition of secretion following the perforation. It is clear, therefore, that the duodenum may be infected during the temporary achlorhydria resulting from acute gastritis, and the infection may last sufficiently long for ascending infection of the gall-bladder to occur. It is, in fact, not uncommon for patients with chronic cholecystitis to date their symptoms from an attack of food poisoning or an acute infection which may have been accompanied by achlorhydria, even if the gastric secretion when the patient comes under observation is normal. As acute gastritis is very common and few people pass through life without having one or more attacks, it is easy to understand why cholecystitis is such a common disorder.

PREDISPOSING CAUSES

The important part played by anatomical abnormalities in *B. coli* infection of the urinary tract is well known. I believe that the much less familiar anatomical abnormalities of the biliary tract are of equal importance in predisposing to *B. coli* cholecystitis. My own appreciation of this factor is derived from the recognition of what I have called "the mechanical gall-bladder." I have seen about twenty such cases, in which recurrent attacks of typical biliary colic of moderate severity and without jaundice have occurred in the absence of gallstones. The gall-bladder is acutely tender during and for some days after the attack, but the tenderness disappears completely in the intervals, whereas in chronic cholecystitis it is constantly present, though it may vary in degree. At operation the gall-bladder appears to be perfectly healthy, and on this account in some of my earlier cases nothing was done. As the attacks always recurred, a second operation was performed in the majority of cases and the gall-bladder was removed; although it was normal in appearance, both

Fig. 1

Cholecystogram taken with the couch raised to a semi-erect position. An opaque meal has been given in order to visualise the pyloric vestibule and duodenum. The proximal half of the cystic duct is dilated to a cystic form and is separated from the distal half with its normal lumen by an acute angle. This condition was confirmed at the operation; the gall-bladder was not inflamed.

microscopically and macroscopically, the attacks ceased. It is nowadays not difficult to recognise these cases. On cholecystography the gall-bladder fills well and there is no sign of a stone, and the bile obtained by Lyon's method is perfectly normal. Sometimes it is possible to recognise some unusual conformation of the cystic duct in the cholecystogram (*see* Fig. 1), and occasionally the shadow of the gall-bladder is unusually large, corresponding with the enlarged renal pelvis seen on pyelography in analogous obstructions of the ureter, but the rate of evacuation is generally unimpaired, as the examination is almost always performed in the interval between attacks and not when the obstruction is actually present.

If the tenderness is found to be confined to the gall-bladder when it is palpated on visualisation by cholecystography, and if medical treatment fails to give sufficient relief, the evidence is enough to warrant cholecystectomy, however normal the gall-bladder appears to be at operation. In several of my cases some anatomical abnormality in the cystic duct which might interfere with the normal evacuation of the gall-bladder has been demonstrated by Mr. Rowlands, Mr. Gaymer Jones and other surgeons. Some anatomical peculiarity of the kind is, I believe, always present. Occasionally it is an aberrant cystic artery, which Flint found in no less than 31 out of 200 bodies examined post mortem; this may cause intermittent obstruction of the cystic duct when certain positions are assumed, the attack being exactly analogous with Dietl's crises, which are almost always caused by obstruction of the ureter by an aberrant renal artery. Cholecystography has taught us how extremely mobile the gall-bladder may be; it often drops several inches when the erect position is assumed, so that a normal-looking disposition of the ducts at operation does not exclude the possibility of intermittent obstruction in the erect position or when lying on one side.

The "mechanical gall-bladder" can rarely be recognised as a clinical entity unless it is free from infection, as if infection is present it is likely to be diagnosed as an ordinary case of *B. coli* cholecystitis. But even a minor degree of the same condition, which is insufficient to cause attacks of colic, must predispose to cholecystitis by giving rise to stasis of bile in the gall-bladder. When the bile becomes temporarily infected with *B. coli*, the mucous membrane of the gall-bladder is very likely to become infected and inflamed if some mechanical obstacle prevents its efficient evacuation. It is generally impossible to recognise the mechanical factor clinically, as in the majority of cases no colic occurs. When, however, a case of *B. coli* cholecystitis is accompanied by definite biliary colic in the absence of gallstones and does not respond to medical treatment, surgery is required on account of the mechanical condition present; at operation the cholecystitis may be found to be so mild that by itself it could hardly account for the persistent symptoms, but cholecystectomy is followed by permanent freedom from attacks.

B. COLI CHOLECYSTITIS AND GALL-STONES

Gallstones rarely develop except in the presence of chronic cholecystitis, the solitary sterile cholesterol stones being the only important exception. The detritus formed in the gall-bladder by mucus, degenerated epithelial cells and bacteria form a nucleus for the formation of stones. In many cases of gallstones, however, when bile is obtainable by Lyon's method it is found to be sterile and free from leucocytes (30 per cent. of our cases), and no organisms can be isolated from the stones or the wall of the gall-bladder when removed by operation, although the anatomical evidence of old inflammation is quite definite. It is clear that an additional factor is required for the development of gallstones, probably something connected with cholesterol metabolism. Otherwise it would be impossible to explain why *B. coli* cholecystitis is only slightly more common in females than males, whereas gallstones occur twice as often in females. The difference has probably little if anything to do with pregnancy, as Gross's statistics obtained from 9,531 Leeds autopsies show, as I had previously suggested, that the incidence of gallstones is no greater among women with children than among women who have had none.

Many patients with cholecystitis find that just those articles of diet which contain most cholesterol, such as eggs, butter and cream, aggravate their symptoms, and they are often also distasteful to them, the repugnance dating from childhood and long before the onset of the cholecystitis. This is a characteristic symptom of cholecystitis, as it occurs in no other digestive disorder, but it is by no means constantly present, and I am inclined to think that it may be an index of that disturbance in metabolism which predisposes to the development of gallstones in only a certain proportion of patients with chronic *B. coli* cholecystitis—a sign of the "cholelithic diathesis." Being a result of this diathesis it is likely to persist after cholecystectomy, so that in spite of there being no danger of further stone-formation, the patient may still be most comfortable on a cholesterol-poor diet.

SYMPTOMS

Chronic cholecystitis is the most common organic cause of chronic dyspepsia. The patient complains of intractable indigestion of an irregular character, in striking contrast with the clock-like regularity of the pain in duodenal ulcer. The time of onset and the severity of the pain vary greatly from meal to meal and from day to day; it sometimes begins immediately after food, and at other times it may not come until two or three hours after a meal, or it may only occur in the early part of the night. It is unaffected or only incompletely relieved by taking food and by alkalis. In most cases the patient complains of what he calls flatulence, but this is really only a sensation of fulness, which is not associated with increased fermentation, and only with eructation when it gives rise to aerophagy by causing him to make repeated but futile efforts to belch in the hope of relieving his discomfort.

Nausea is common. It may occur on waking, when it is sometimes associated with vertigo, cold sweats or headaches, in which case migraine may be simulated, though the headache is not unilateral. It may be relieved by breakfast unless eggs are eaten, when it is often aggravated. It is sometimes followed by vomiting, which gives much less complete relief than in ulcer.

Patients with ulcer generally lose all their pain in two or three days if put to bed on a strict diet, but improvement is less likely to follow in cholecystitis; the dyspepsia may, however, rapidly improve if yolk of egg and other fatty foods are prohibited.

If attacks of biliary colic, whether of the abortive or acute variety, occur in association with symptoms of cholecystitis, gallstones are probably present.

The discomfort after meals is generally in the mid-epigastrium, but it often extends to the right and may be confined from its onset to the right hypochondrium. It is frequently associated with pain at the angle of the right scapula.

PHYSICAL EXAMINATION

The four quadrants of the abdomen should be successively palpated. The patient is asked no questions, but his face is watched. If cholecystitis is present no change in expression will be observed until the right upper quadrant is reached. The hand is placed flat on the abdomen with the fingers pointing upwards below the left costal margin whilst the patient takes a deep breath; however deeply the fingers press no resistance is encountered, and it is obvious from the patient's face that no discomfort is felt. The manœuvre is now repeated on the right side; it is at once recognised that the rectus muscle does not " give " to the same extent, or it contracts suddenly as pressure is exerted (*défense musculaire*); the patient may look uncomfortable, and when told to take a deep breath the inspiration is suddenly arrested and an expression of acute discomfort is seen. Palpation is next carried out on the right side in three segments; it is found that pain is only produced during deep inspiration with the middle one, or much more with the middle one than the others, the slight pain produced with the latter being a result of associated hepatitis. This is conclusive evidence that cholecystitis is present; it is due to the tender gall-bladder being brought into intimate contact with the fingers when the liver descends.

CHOLECYSTOGRAPHY

It is commonly said that the gall-bladder can be regarded as healthy when nothing abnormal is found with cholecystography. This is a most unfortunate error, as in a large proportion of cases of cholecystitis the inflammation of the mucous membrane of the gall-bladder is insufficient to impair its power of concentrating bile and the contractile power of its muscular coat is unimpaired. It is only in the cases in which the whole thickness of the gall-bladder wall is involved and in those complicated by the presence of gallstones that cholecystography reveals any abnormality. Thus it is rare for a normal cholecystogram to be obtained when the disease has advanced to a degree which will no longer respond to medical treatment, but in the much more common cases in which medical treatment gives more or less complete relief the shadow is normal in every way and filling and emptying take place at the normal rate. Cholecystography is, however, of great value in making it possible to palpate the visualised gall-bladder and to ascertain whether an area of tenderness in the right hypochondrium actually coincides with the position of the gall-bladder (*see* Fig. 2). Cholecystography has revealed how frequently the gall-bladder is situated in unexpected positions, and an area of tenderness some distance from the right costal margin may be found to be directly over the gall-bladder. The discovery of tenderness strictly localised to the gall-bladder with the aid of cholecystography has the same significance as the discovery of tenderness localised to the appendix when it has become visualised after an opaque meal; in both instances the visceral tenderness is evidence of visceral disease. It is a curious fact that neither the inventor of cholecystography, Graham, of St. Louis, nor, as far as I know, any other writer on cholecystography has mentioned this extremely valuable application of the method.

MELTZER-LYON TEST (DUODENAL INTUBATION)

Whenever cholecystitis is suspected, an attempt should be made to obtain some of the contents of the gall-bladder for pathological examination. A sterilised Einhorn tube is swallowed up to the 23-inch mark first thing in the morning before the patient has had anything to eat or drink. The stomach is emptied and washed out with sterile water. The tube is then slowly paid out up to the 28½-inch mark, which allows sufficient length for the duodenum to be reached. The patient lies on his right side and fluid is allowed to run out of the tube by syphonage until the comparatively abundant, acid, turbid and colourless contents of the stomach are replaced by the very small quantity of neutral or alkaline, clear and generally bile-stained fluid present in the duodenum. The pylorus is generally passed in less than half an hour, but if delay occurs the sphincter can be made to relax by the introduction of magnesium sulphate. The duodenum is washed out with sterile water, and from 2 to 4 drachms of a 33⅓ per cent. solution of magnesium sulphate are injected through the tube. This causes the gall-bladder and the bile-ducts to contract and the sphincter of the common bile-duct (Oddi's sphincter) to relax. An abundant flow of pure bile rapidly appears; this is aspirated, and the tube is withdrawn. In the absence of gall-bladder disease the bile never contains any pus cells, epithelial cells, pigment granules or cholesterol crystals, but often a little mucus; it is generally sterile, but a few bacteria may be present if the duodenum has not been sufficiently washed out, especially in cases of achlorhydria, when the duodenal contents generally swarm with bacteria. In cholecystitis the quantity of mucus is greater than normal and

Fig. 2

(Same case as Fig. 1.) The observer's finger was placed over the tender area found under the costal margin when the patient took a deep breath. The patient, who had been given "shadocol" the previous evening, held his breath and the radiogram was taken without preliminary screening. The finger is seen to impinge on the gall-bladder; the increased pressure thus produced must cause pain if the duct were obstructed even in the absence of inflammation.

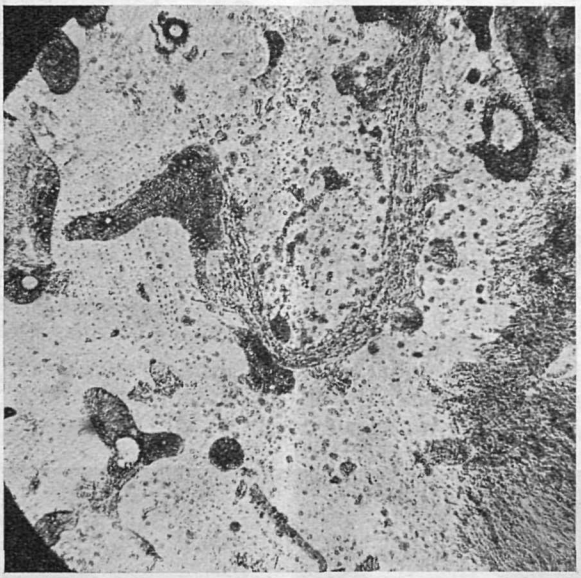


Fig. 3
Lipoid material from intubation in a case of strawberry gall-gladder.

degenerated columnar epithelial cells and, less frequently, pus cells and pigment granules are present; the bile contains bacteria, most commonly an aberrant form of *B. coli* in pure culture, and rarely streptococci or staphylococci. In two cases of mine *B. typhosus* was isolated—23 and 10 years respectively after typhoid fever. The presence of a liquid yellow lipoid material indicates the presence of a strawberry gall-bladder (*see* Fig. 3). Cholesterol crystals of two kinds occur: small and perfectly formed crystals are precipitated from bile in which it is present in unusual concentration (*see* Fig. 4), and larger irregular crystals with the corners broken away or rounded indicate with certainty that gallstones are present, as they are derived from their surface by friction (*see* Fig. 5).

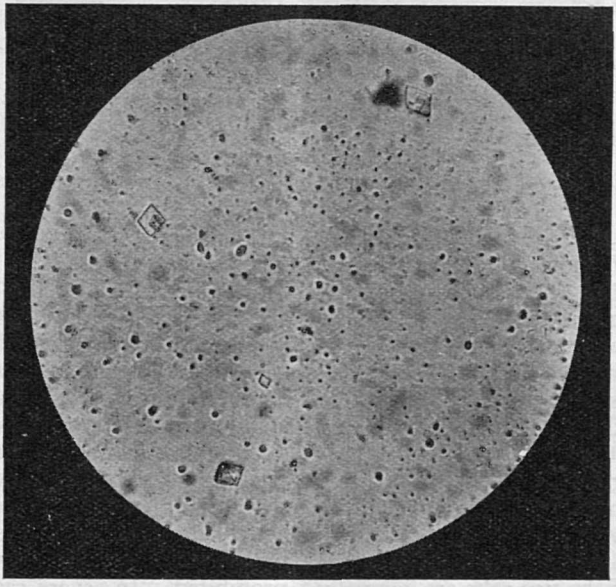


Fig. 4
Small cholesterol crystals deposited from bile on standing.

TREATMENT

The treatment of *B. coli* cholecystitis consists in (1) attempting to sterilise the bile and gall-bladder, (2) promoting biliary drainage, and (3) a cholesterol-free diet.

1. *Biliary antisepsis.*—Hexamine is excreted in the bile as well as in the urine. Owing to the irritant action on the bladder of the formalin which is set free from hexamine by the acid urine it is impossible to give more than 10 or 15 grains three times a day unless special precautions are taken. In 1921 Dr. J. H. Ryffel suggested to me that it would be possible to give a much larger dose if the urine were kept alkaline. We therefore tried the effect of giving 50 grains of hexamine with alkali three times a day, and subsequently we gave a still larger dose. We now give 100 grains of hexamine with 60 to 100 grains each of sodium bicarbonate and sodium citrate in two ounces of water after breakfast, after tea, and last thing at night with a glass of water or milk; these special times are chosen so as to prolong the action as much as possible, and the hexamine is given when the stomach is full in order to avoid gastric irritation. It is best to give the alkalis alone for a day or two before adding the hexamine so that the patient can find by testing his urine with litmus how much is required to keep it constantly alkaline; 60 grains each of the two salts are generally sufficient, but occasionally 100 grains of each are required. Given in this way the 300 grains of hexamine taken in the day produce no unpleasant symptoms of any kind. Knott has recovered hexamine from the bile obtained through a duodenal tube. He has also shown that bile, which has normally no antiseptic properties, becomes strongly inhibitory to bacterial growth when it contains hexamine, and he has frequently demonstrated that a heavy *B. coli* infection of the gall-bladder completely disappears after a short time as a result of treatment with these large doses of hexamine.

2. *Biliary drainage* can be most easily promoted by Epsom salts, which Venables has shown act just as efficiently when given by mouth as through a duodenal tube. The largest dose short of causing looseness of the bowels when no other aperient is taken should be given every morning in concentrated solution when the patient is fasting, and the patient should lie on his right side to hasten its entry into the duodenum, where it calls forth a reflex contraction of the gall-bladder and bile ducts and relaxation of Oddi's sphincter. Olive oil acts in precisely the same way, and a tablespoonful should be given three times a day a quarter of an hour before meals. It is particularly useful to replace the animal fat which may have to be prohibited. In severe cases biliary drainage may

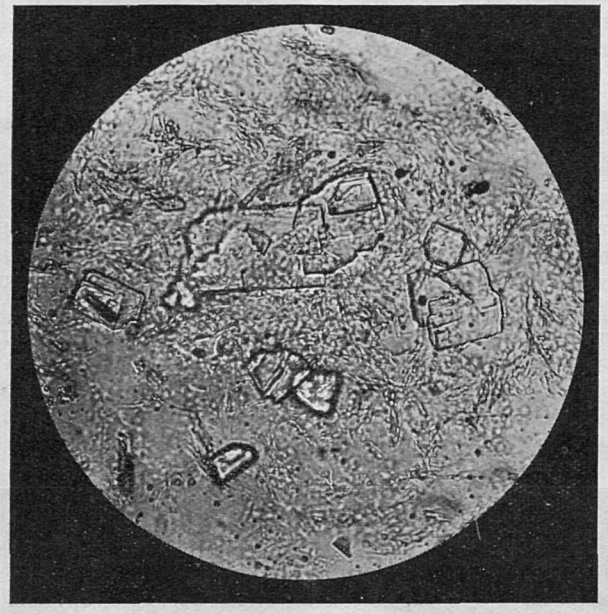


Fig. 5

Cholesterol fragments in intubation bile from a case of gallstones.

be still further stimulated during the first week or two of treatment by injecting 1 or 2 c.c. of pituitrin a quarter of an hour before giving the magnesium sulphate: the evacuation of the bile passages with the magnesium sulphate is likely to be more complete as a result of the preliminary contraction caused by the pituitrin.

3. *Diet.—B. coli* cholecystitis is not in itself an indication for dieting. But whenever it appears probable that a tendency to the development of gallstones co-exists, a cholesterol-free diet is indicated. I have already pointed out how frequently this diet is chosen by the patient himself, who either has found by experience that eggs and animal fat of all kinds gives him indigestion or has a definite repugnance for them. The discovery of cholesterol crystals or droplets of lipoid material in the bile obtained through a duodenal tube is a further definite indication for a cholesterol-free diet, which consists in the complete avoidance of yolk of eggs, cream, cheese, kidney, liver, sweetbread, brain, duck and goose, the fat of meat, suet, pork and sausages, whilst butter should be taken sparingly.

SURGERY

The indication for surgery in chronic cholecystitis is the failure of medical treatment after it has been thoroughly carried out for an adequate time. Lord Moynihan has said that he knows of no new treatment started within the last few years which has so greatly reduced the necessity for surgical interference in any individual disease as massive doses of hexamine in gall-bladder disease. Many cases which still require operation can be brought to a condition of much greater safety by preliminary treatment of this kind, and I am convinced that a fortnight's medical treatment should invariably precede any operation for chronic disease of the bile passages. Even in acute and subacute cases the temperature often falls rapidly and the patient's general condition improves very greatly after a few days of treatment with hexamine. With obese patients a longer period of preparation is desirable, both with the object of making the operation less difficult and improving the condition of the patient's heart. It is not difficult by suitable diet to make such a patient lose a stone and a half in weight in a month, during which biliary antisepsis and drainage can also be employed.

The day after operation the hexamine treatment should be recommenced and should be continued for two or three weeks, or still longer if there is reason to believe that the gall-bladder infection was only part of a general infection of the bile-passages. The promotion of biliary drainage by Epsom salts is of even greater importance after than before the operation, and it should be used to the exclusion of all other aperients. Its continued use after the operation is likely to prevent the symptoms which not uncommonly occur after cholecystectomy for gallstones, and which suggest that a stone has been overlooked in the common bile-duct. I believe that they are generally due to the disturbance in the neuromuscular mechanism of the biliary passages which follows removal of the gall-bladder and which gives rise to achalasia of Oddi's sphincter.

Indigestion persisting after operation may also be due to achlorhydria. This can often be cured by treating the gastritis by lavage every morning with dilute hydrogen peroxide (1 drachm to the pint). If, however, the achlorhydria proves to be due to irremediable achylia, 1 to 2 drachms of dilute hydrochloric acid should be given in 5 to 10 oz. of water with orange juice and sugar as a beverage three times a day.

Nursing News

THE result of the entertainment by the Nursing Staff held on the three days April 29th, 30th, and May 1st, was as follows:—

	£	s.	d.
Sale of tickets and receipts at the door	61	1	0
Sale of refreshments and programmes by the Preliminary Training School	16	6	8
Donations	10	16	0
Jumble Sale held in February for expenses	6	5	4
	£94	9	0
Expenses	11	9	0
Balance	£83	0	0

The balance, £83, has been paid into the Cosmo Bonsor Memorial Scholarship Fund. This is a most satisfactory result and has beaten all records. It is the result of hard work by all who took part in it and the co-operation of the Matron's Office and the Sisters.

Our thanks are due to the Dean and Dr. Spurrell for lending the Physiology Theatre, and to the Superintendent for allowing the help of the Works Department.

The Clinical Notes of Mr. Cass, 1825

By Marcelli Shaw

THROUGH the courtesy of my colleague Miss E. E. Cass, I have been given opportunity of examining the clinical notes of Mr. Cass, who was a student at Guy's Hospital in 1825. Many of the notes were indecipherable, and I have only copied those which were clear and understandable in their context.

Perhaps two of the most interesting notes of the lecturers will be found in that of Dr. Blundell's experiment of splenectomy upon a rabbit and the note on Mr. Bransbey Cooper's operation for dislocation of the shoulder joint, which was the subject of a detailed and interesting lecture by Mr. Eason.

———

Sept. 8th, 1825.—Dr. Blundell mentions having taken out the spleen of a rabbit and it lived for two years without any apparent want of that organ. After he had killed it he found bile in a sufficient quantity.

Mr. Key says there are three kinds of deposit of urine: Lithiate of ammonia, white or triple phosphate and black is the oxalite of lime. Injuries to the back predisposed greatly to alkaline urine.

Sir Astley Cooper condemns the use of the lancet for strangulated hernia of old people.

Mr. Green says that when a hernia sank and protruded it remained so.

Jan. 27th, 1826.—Mr. Key says that experience forbids the operation of lithotomy in very young children, upon whom you should never operate before two years old, as convulsions will follow.

The worst period is from 20 to 54. After this period the patient undergoes the operation better. The morning before the operation a purgative should be given, and an hour before the operation a purgative and enema should be given.

When the prostate gland is enlarged the gorget is best for the operation.

Mr. Key believes the pudic artery is seldom wounded.

Whenever the artery of the bulb is cut away it may be tied, but it is a remarkable fact that the four cases Mr. Key has seen this artery tied, all have died.

Jan. 30th, 1826.—Mr. Green says the femoral hernia is much more urgent in its symptoms, when strangulated, than inguinal. The patient frequently dies on the fourth day.

Strangulation in the umbilicus is less frequent than any other.

Feb. 2nd, 1826.—Mr. Bransbey Cooper reduced a dislocation of the humerus after five weeks' standing. Extension was kept up for one hour. The patient was in a very relaxed state, having lost 42 oz. of blood and taken two grains of opium.

Feb. 3rd, 1826. Mr. Key says in dyspeptic persons pulsation is often felt near the solar plexus, which may be mistaken for aneurism, but on careful examination the pulsation will be found only to occupy a small spot, whilst aneurism pulsation is diffused. When the tumour is placed over the aorta it may be distinguished from an aneurism by the tumour rising and falling.

June 4th, 1826. *Inspectio cadaveris*.—A woman who died of mortification of the foot was examined this day. The opening from the left auriculo into the left ventriculo was a complete bony ring.

In going round the wards of Guy's Hospital with Sir Astley Cooper, he examined a man who had an injured heart which was from a disease of the valves of the aorta. He said he knew this by feeling the heart at the ninth rib and by feeling the heart at that part beating forcibly, whilst the pulse at the wrist was feeble, the valves preventing the columns of blood being propelled into the aorta.

Sir Astley Cooper said that the veins never healed by the adhesions on their internal coats, but by the adhesions of their outer coats and near parts.

Dr. Parry says that when the pulse in tenanic cases does not rise above 120 before the fourth day the patient generally recovers.

Mr. Morgan says he has seen half a dram of tincture of opium between every three hours in a case of tetanus without any effect.

June 10th, 1826.—Mr. Key says in wounds of the scalp take care and remove the hair. He also recommends cold washes to be applied to the head. Generally, bleeding is unnecessary. Never apply a blister to the head because you are exciting the structure already in a state of irritation, but apply it upon the muscles of the neck. When there is a wound of the scalp give purgatives. In treating an abscess of the scalp make several openings. The consequences of wounds of the scalp are phlegmonous inflammation and secondary abscesses.

Jan. 13th, 1826.—Mr. Key says that the best treatment in the depressed stages of concussion is to put the patient in bed and put bottles filled

with hot water to the feet. This is better than giving stimulants. Sickness occurring a few hours after the accident suggests a lesion of the brain or fracture through the base, and is always to be considered a bad symptom.

There is often a good deal of stridor with concussion, which is relieved by blistering.

In a person affected with concussion you should always keep the bowels open.

There is no particular symptom which indicates fracture through the base of the skull.

In blows on the head you may be deceived by the appearance of the depression. It may have a hard circumscribed edge with a soft centre. This is produced by extraversation of the blood in the membranes round.

Jan. 17th, 1825.—Mr. Green says that stricture in inguinal hernia may be at the internal ring or at the external ring.

March 30th, 1825. *Hydrocephalus.*—Mr. Key this day gave us some morbid appearances of the brain in a person who died of this disease. The duramater was found enormously distended with fluid. There was no corpus callosum. The ventricles and the cavity between the duramater and tunica arachnoidia are thinned.

Jan. 25th, 1826.—The subject was inspected to-day who died of psoas abscess. Before death he had extensive œdematous swelling of the lower extremities and mortification of both feet. Fluctuation was felt near the insertion of the abductor longus. A large abscess was found alongside of the psoas muscle and under Poupart's ligament. There was disease of the sacrum and of the last lumbar vertebra in the bone. In the ilium there was found considerable portions of coagulated blood, which appeared to have taken place before death.

Mr. Green on the venereal says that by gonorrhœa is to be meant the secretion in the disease when applied to the secreting surface produces the same disease. By venereal is to be understood that disease will be produced by the matter when applied to a non-secreting surface becoming absorbed, and the symptoms produced, which are called secondary symptoms, are blotches, nodes and sore throat.

Chordu is produced by contraction of the cellular tissues and the penis is drawn to the side.

The indications in gonorrhœa are two : first, to reduce excessive secretion and, secondly, to move the specific action. The first indication is fulfilled by leeches, the hip bath, macerating the penis in warm water and gentle purging. Mr. Green believes the discharge in gleet to be infectious, and therefore recommends caution, and the treatment is much the same as that for gonorrhœa. Just by improving the general health the disease will frequently subside.

Stricture is of three kinds : spasmodic, inflammatory and injury. The symptoms are flow of urine into his breeches after the patient supposes he has evacuated the water entirely, and this becomes very annoying. The water falls in a small narrow stream in a twisted or forked direction, and there is often pain passing up the urethra.

Sir Astley Cooper says that when a chancre is soon followed by sloughing secondary symptoms seldom follow.

Sept. 18th, 1825.—Sir Astley Cooper says that he believes secondary symptoms may appear without primary sores.

In the case of a female with an enlarged heart and aorta, Sir A. Cooper recommended ferri muriat, grains 15, and digitalis, grains 15, to be given three times a day. He said that digitalis lessened the action of the pulse, whilst the ferri muriat prevented the lowering of the strength.

Sir Astley Cooper on examining a chronic enlargement of the breast said he knew it was scirrhus by the constitution being little affected, by the want of lancinating pain, by the tumour being free and perfectly moveable and by its lobulated feel. Sir A. Cooper recommended the diseased part to be removed.

Dr. Addison considered catarrh and pneumonia to be the same.

The Relation Between Dental Disease and Albuminuria of Pregnancy

OUR interest in this subject was kindled by a sentence in a well-known text-book. To elucidate it we have analysed 1,261 reports from Salomons Centre. All cases showing albumen in the urine once or more were counted as albuminuria ; cases of chronic nephritis were not counted at all. All cases with notes of " bad teeth," " caries," pyorrhœa, or any where dental work is recorded, were counted as " Teeth Bad." Those cases in which no remark is made on the condition of the teeth were counted as " Teeth Good." The cases were analysed in groups of about 200 in order to calculate the Probable Error of the figures obtained, and thus assess the significance of the results. We have taken the Probable Error as the standard deviation divided by the

square root of the number of of observations—in this case six.

Discarding second and third decimal places, we obtain that 2.5 ± .8 per cent. have both bad teeth and albuminuria, 18 per cent. have bad teeth, 10 per cent. albuminuria, 1.8 ± .7 per cent. is the theoretical figure.

It will be seen that about 40 per cent. more patients have a combination of bad teeth and albuminuria than should have by chance, but this difference has about an even chance of being due to chance alone.

This investigation deals with an inadequate number of cases, but such as it is it does not support the belief that albuminuria and dental disease are connected.

N. O. LUCAS.
L. J. BLAY.

No Albuminuria, Teeth Good.	No Albuminuria, Teeth Bad.	Albuminuria, Teeth Good.	Albuminuria, Teeth Bad.	Total.	Percentage of Albuminuria and Bad Teeth Group.	Deviation from Mean.	Square of Deviation from Mean.	'Chance' No. from Cols. 1, 2 & 3.	'Chance' Percentage from Cols. 1, 2 & 3.	Deviation from Mean.	Square of Deviation.
152	28	12	5	197	2.537	.036	.001296	2.210	1.122	.694	.481636
211	54	20	6	291	2.062	.511	.261121	5.118	1.758	.058	.000336
154	30	10	5	199	2.513	.060	.00360	1.947	.974	.842	.708964
134	43	22	2	201	.995	1.578	2.489088	7.059	3.529	1.713	2.934369
150	24	21	7	202	3.465	.892	.795664	3.360	1.663	.153	.021409
132	22	20	7	181	3.867	1.294	1.674436	3.333	1.852	.032	.001024
					Mean =2.573		5.221965		Mean =1.816		4.149738
							√ =2.285= Standard deviation .834=probable error				√ =2.072= Standard deviation .750=probable error

Correspondence

The Biennial Dinner

To the Editor of the GAZETTE

SIR,—Attendance at the Biennial Dinner is a habit that once having acquired one would not readily break, and I feel sure that the letter you published in the last number of the *Gazette* from " S." voices the opinion of many of the younger Guy's men. I am certain that were the cost of the Dinner not so high many more would attend the Dinner, thus starting a habit which they would keep up.

Those of us who have been, realise what an extremely pleasant function it is, and it seems a pity that anyone should be discouraged from going because of the cost.

Yours, etc.,
M.

Hasty First Aid

To the Editor of the GAZETTE

SIR,—I am fortunate in being connected with the St. John's Ambulance Brigade in a provincial town, and during the last few months I have seen several cases and heard of others which do not cast a very favourable light on our profession. The treatment of casualty cases, particularly on the road, seems to be singularly inefficient. I saw a case of a fractured clavicle with severing of two fingers on the same side. The doctor bound the arm to the side with a one-inch bandage round the chest. The bleeding fingers were not raised to the neck. A triangular bandage, available in the waiting ambulance, was refused. A fulcrum was not used to draw the broken ends apart.

In another case of a broken tibia almost piercing the skin, no attempt was made to place the joints above and below the fracture at rest or to reduce the shortening.

In these cases and others the St. John's Superintendent stood by his ambulance bewildered and helpless. These were the operations performed by the doctors who had lectured to him on the treatment of fractures. In the consuming urge to get rid of the patient the doctor ignores the risk of hasty transport and the value of thorough immediate treatment. I have made inquiries amongst fellow students and found this state of affairs is not local. One naturally wonders what excuse can be found for the neglect. If through the publicity of your columns any light could be thrown on this problem, a St. John's Ambulance Division and several other people would be gratefully indebted to you, Sir.

Yours, etc.,

J. F. B.

Guy's Hospital,
S.E.1.

Sport

United Hospitals Rugby Football Club—Cup-Tie Draw, 1936.

1st Round		*2nd Round*		*Semi-Finals*	*Final*
1. Bye.		Bart.'s / Middlesex	Thursday, 13th Feb.		
2. Bye.					
3. Bye.				Thursday, 5th March.	
4. King's / 5. London	Tuesday, 11th Feb.	St. Thomas's	Tuesday, 25th Feb.		
6. St. George's / 7. Westminster	Thursday, 6th Feb.				Wednesday, 18th March.
8. Bye.			Thursday, 20th Feb.		
		Guy's		Tuesday, 3rd March	
9. Charing Cross / 10. U.C.H.	Tuesday, 4th Feb.				
11. Bye.			Tuesday, 18th Feb.		
		St. Mary's			

The London University Inter-Collegiate Sports

THE University Inter-Collegiate Sports were held at Motspur Park on 2nd, 3rd and 4th May. First place was won by University College, with Guy's and St. Mary's second equal. Guy's were also third in competition for the Thierry Cup, which is awarded on a formula taking cognisance of the number of points gained by teams in proportion to the number of students in their respective Colleges.

The occasion served as a good try-out for the Hospital team in view of the Inter-Hospitals Sports on May 22nd. Three members of the team took first places, three took second and one a third place. In the 3 miles, Etheridge almost lapped the whole field. Griffin was second to the University President, E. D. Vane, in the 120 yards Hurdles, and he also won the long jump. Yerbury and Revell took first and second places in the High Jump, Yerbury winning on the third jump-off at 5 ft. 7in. Brown was second in Throwing the Javelin to Prendergast, the Empire Discus Champion, and Denton took third place in this event.

After the sports Griffin, Yerbury, Revell, Denton, Du Toit, Etheridge and Brown were chosen to represent London University in the British Universities meeting at the White City on May 18th.

Guy's Hospital Athletic Sports

THE Annual Athletic Sports were held at Honor Oak Park on Saturday, May 11th. Although the sun shone continuously, a strong breeze was blowing, which hindered everybody but the sprinters. However, in spite of the conditions, three records were broken and one equalled and some uniformly good performances seen. It was regrettable that the number of entrants was so small, yet the fact that two records were also broken last year is significant of the

improvement which has recently taken place in Hospital Athletics.

A new sprinter of ability was discovered in L. G. Morey. Du Toit fulfilled the promise shown last year by equalling the quarter-mile record. Griffin broke his own record for the 120-yards hurdles and won the long jump as well. Etheridge won the 3 miles, 1 mile and half-mile, a feat only equalled by Hogbin seven years ago. In the high jump both Yerbury and Revell broke the record held by Druce since 1926.

Our very sincere thanks are due to those members of the Staff who so kindly gave up their time to act as judges, and especially to Mrs. Davies-Colley, who very graciously distributed the prizes at the conclusion of the sports.

RESULTS

100 *Yards.*—1. L. G. Morey and D. Du Toit (dead-heat); 2. P. Griffin. Won by 2 feet. Time, 10½ secs.

1 *Mile.*—1. A. E. J. Etheridge; 2. D. G. Lyon. Time, 4 mins. 38 secs.

Putting the Shot.—1. A. G. T. Brown (33 ft.); 2. E. R. J. Walmsley (31 ft. 6 in.); 3. P. H. Denton.

120 *Yards Hurdles.*—1. P. Griffin (finished alone). Time, 16 3/5 secs. (record).

Throwing the Javelin.—1. A. G. T. Brown (130 ft. 9 in.); 2. P. Griffin (120 ft.); 3. P. H. Denton.

440 *Yards Open.*—1. D. Du Toit; 2. D. M. Douglas; 3. P. Griffin. Won by 3 yards; same. Time, 52 secs. (equals record).

Ladies' Race.—1. Miss D. Rains; 2. Miss E. M. Poole and Miss Sangster (dead heat).

High Jump.—1. L. C. B. Revell and R. O. Yerbury (dead-heat). 5 ft. 7 in. (record); 3. P. Griffin, 5 ft. 4½ in.

220 *Yards Handicap.*—1. M. Edward Davies (rec. 4 yards); 2. L. C. B. Revell (rec. 3 yards); 3. A. G. T. Brown (scratch). Won by 1 yard; 2 yards. Time, 24 secs.

Visitors' Race.—1. F. L. E. Musgrove; 2. H. H. Crabb; 3. Spencer.

Throwing the Discus.—1, D. Du Toit; 2. A. R. Leask; 3. C. Wilson. Distance, 85 ft. 11 in.

Half-Mile.—1. A. E. J. Etheridge; 2. D. M. Douglas; 3. A. G. T. Brown and A. J. Smith (dead-heat). Time, 2 mins. 6 secs.

Long Jump.—1. P. Griffin; 2. M. Edwards-Davies; 3. L. C. B. Revell. Distance, 19 ft. 8¼ in.

220 *Yards Open.*—1. D. Du Toit; 2. L. G. Morey; 3. P. Griffin; Won by 2 yards; same. Time, 23 secs.

Obstacle Race.—1. P. Griffin; 2. J. A. R. Smit; 3. L. C. B. Revell.

100 *Yards Handicap.*—1. M. L. Walt (rec. 5 yards); 2. A. G. T. Brown (rec. 2 yards); 3. M. Edwards-Davies (rec. 4 yards). Won by inches; same; same. Time, 10¼ secs.

3 *Miles.*—1. A. E. J. Etheridge; 2. D. M. Douglas; 3. C. Solomon. Time, 15 mins. 24½ secs. (record).

Relay Race.—Medicals beat the Dentals.

Tug-of-War.—Dentals beat the Medicals by two pulls to nil.

THE CLEMENT LUCAS CUP

(Awarded to the competitor obtaining the highest aggregate of points in open events.)

1. D. Du Toit, 19 points; 2. P. Griffin, 17 points; 3. A. E. J. Etheridge, 15 points.

A. G. T. B.

Swimming

AT the Annual General Meeting held on Thursday, May 2nd, with Mr. T. B. Layton in the Chair, the following were elected to fill the posts left vacant by retiring officers :—

Captain—J. A. R. Smit.

Hon. Secretary—A. M. McCall.

Assistant Secretary—A. D. MacPherson.

At the close of the meeting a vote of thanks was returned to Mr. Layton, and also to C. A. Styer, the retiring Captain.

GUY'S v. WOODSIDE S.C.

IN this, the opening match of the season, which was played on Saturday, April 27th, the Hospital made an impressive start. The team, which was weakened by the absence of C. de Gruchy and Cook, nevertheless played very well together, and never at any moment in the game did they look like losing.

J. Krone, in goal for only the third time, played an excellent game, and gave promise of developing into a very good goalkeeper. The victory was in a large part due to the steady play and accurate shooting of C. A. Styer, who scored three goals for the Hospital.

Result.—Won, 6—3.

Team.—J. Krone; C. Styer, C. Halamandres; J. A. R. Smit; A. D. MacPherson, A. M. McCall, T. L. Weston.

GUY'S v. LENSBURY S.C.

ALTHOUGH this game, played on Friday, May 10th, resulted in a victory, the standard of play in no way justified the very large margin. This fact may be partially explained

by the absence of two regular members of the team, which naturally tended to upset any attempt at the team-work which is so important in water polo.

The defence, who were capable of dealing with the attacks made by Lensbury, rarely, however, accomplished anything in the nature of a passing movement or a breakaway, and most of the goals came from snap-shots made by the forwards.

Result.—Won, 8—2.

Team.—J. Krome; C. Ziervogel, C. Halamandres; J. A. R. Smit; J. Bulstroke, A. M. McCall, T. L. Weston.

GUY'S v. OLD PAULINES

ON Wednesday, May 15th. After taking second and third places in both the two-lengths and one-length races, Guy's were two points down, but a tremendous effort in the team race turned the scale and the Hospital won the swimming by two clear points.

In the polo, however, we were not so successful, and were beaten by superior team work. The team, which was weakened by loss in transit, did not go down without a struggle, and if Smit had not been feeling the effects of a strained shoulder the game would probably have been more level.

Results.—Swimming, won, 12—10; Polo, lost, 6—1.

Teams.—(Polo) J. Krome; R. Kark, A. M. McCall; J. A. R. Smit; A. Drew, C. Halamandres, A. Crook. (Swimming) Drew, Palin, McCall, Halamandres.

Blues Committee

AT a meeting of the Blues Committee on May 13th the following "Blues" and "Half-Blues" were awarded:—

RUGBY FOOTBALL

Full Blue.—R. C. S. Dick, E. R. Davies, K. A. Stanyon-Jaques, P. Fletcher, P. K. Hopkins, C. Ziervogel.

Half-Blue.—R. O. Yerbury, W. F. Fraser, G. van der Merwe, P. H. Crampton, R. M. de Gregory.

ASSOCIATION FOOTBALL

Full Blue.—A. N. Marley, G. W. Dorr, G. C. Sprigings.

Half Blue.—R. C. Jackson.

HOCKEY

Full Blue.—E. B. Rowe, J. E. Elliott, H. V. Brown.

Half Blue.—J. T. M. C. Jenkins, T. C. Thorne, O. B. Alakija, C. H. Phillips, H. R. W. Franklin.

TENNIS

Full Blue.—E. P. O. Watson, K. Chartikavanij, R. G. Hunt.

Half Blue.—W. G. Zorab, A. N. Marley.

ATHLETICS

Full Blue.—A. G. T. Brown, L. C. B. Revell.

New Entries—May, 1935

MEDICAL

Name.	*School.*	*Year.*
Jones, D. H. B.	Mill Hill School	1st M.B.
Rosenfeld, H.	University of Munich	Clinical Period.
Skea, R. L.	Grey College, Bloemfontein	1st M.B.
Davies, M. E.	Llandovery and Downing College, Cambridge	1st M.B.

DENTAL.

Badgett, J. L.	Newport High School	1st Year.
Burt, M. K.	Cheltenham	Pre-Medical.
Butterfield, F.	Dean Close, Cheltenham	1st Year.
Capon, J. H.	King Edward VI, Norwich	1st Year.
Clough, D. A.	Oakmount, Arnside	Pre-Medical.
Dossor, J. A.	King's, Ely	Pre-Medical.
Irwin, L. M.	Sir Roger Manwood's, Sandwich	1st Year.
Murley, J. R. P.	Wycliffe College, Stonehouse	1st B.D.S.
Piercy, F. J.	Kingston Grammar School	Pre-Medical.
Wray, F. T.	Taunton	1st Year.

Hospital Information, etc.

Notices

MUSICAL AND OPERATIC SOCIETY

THE orchestra of the Society has been re-formed and rehearsals are proceeding with the object of giving a series of concerts. The Secretary is appealing for new members for the orchestra, and asks all those interested to attend the next rehearsal on Thursday, May 30th, at 8.15 p.m., in the Nurses' Home. The first concert of the series will take place on Thursday, June 20th, in the Physiology Theatre. The programme will include the Grieg Piano Concerto and Schubert's Unfinished Symphony (in B minor).

Guy's Hospital Medical School

ARTHUR DURHAM TRAVELLING STUDENTSHIP

Applications are invited for the Arthur Durham Travelling Studentship, of the value of £100. Details of the conditions governing the Studentship may be obtained from the Medical School Office.

Applications should be lodged with the Dean not later than June 15th, 1935.

T. B. JOHNSTON,
Dean.

NORTH-WESTERN UNIVERSITY DENTAL SCHOOL, CHICAGO SCHOLARSHIPS

The North-Western University Dental School, Chicago, offers a number of Scholarships to graduates of foreign Dental Schools. The Scholarships confer free tuition and the use of instruments and equipment for a period of 9 to 18 months, and the course covered leads to the degree of Doctor of Dental Surgery. Each scholar is required to purchase the necessary text-books and to pay minor incidental fees.

Guy's Hospital Dental School is invited to nominate one scholar, who shall commence the course on September 1st, 1935, and applications for nomination should be lodged with the Dean not later than June 15th, 1935.

Further details with regard to the conditions of the Scholarships, living expenses, etc., may be obtained from the Medical School Office.

Pass List

CONJOINT BOARD. FINAL EXAMINATION.

April, 1935.

Pathology.

A. B. Baxter
F. A. Bleaden
A. G. T. Brown
*H. V. Brown
C. S. Darke
D. F. Freebody
J. A. T. Griffiths
H. R. S. Harley
B. W. Hunt
S. Jackson
H. M. Kelsey
F. L. E. Musgrove
W. M. Philip
E. Sayle
T. A. Turnbull
G. N. Wright

Medicine.

*B. Agranat
*P. W. G. Baxter
*A. L. W. Bell
A. S. Bookless
*H. V. Brown
*J. A. G. Carmichael
*J. V. Clark
*A. R. O. Denton
*J. E. Elliott
*W. P. Fitch
*C. E. M. de Gruchy
*J. A. J. Hammond
*T. H. Hills
N. W. Irish
*F. H. Lee
*M. S. M. Mehta
*J. H. Mayer
*W. J. Mitchell
G. E. Paxon
*F. O. Potter
E. B. Rowe
*J. E. Spalding
*D. P. Stevenson
*F. Taylor
*A. A. Wailer
*A. B. Wayte
*E. D. H. Williams

Surgery.

B. B. Bridges
*H. V. Brown
R. J. F. Campbell
*J. A. G. Carmichael
W. W. Cashmore
*J. V. Clark
P. W. Clarkson
G. M. Curtois
*R. W. Cope
*A. P. Dale-Bussell
*G. C. Denny
*J. E. Elliott
*W. P. Fitch
*E. Gareh
P. B. Hanbury
M. J. Harris
T. G. Humby
M. J. Lange
*F. H. Lee
*M. S. M. Mehta
*J. F. Morris
C. W. H. Van der Post
A. E. K. Salvi
J. B. Spearman
*K. Tatz
J. T. Waldie

Midwifery.

L. J. Blay
R. J. F. Campbell
A. W. Gibbons
*R. W. Cope
C. S. Darke
C. D. Farris
D. F. Freebody
J. A. T. Griffiths
H. R. S. Harley
A. G. W. Hill
W. Hughes
B. W. Hunt
R. A. Johnson
H. M. Kelsey
*M. S. M. Mehta
G. J. Van der Merwe
F. L. E. Musgrove
W. M. Philip

* Have now completed the examination.

Papers by Guy's Men

St. G. B. D. Gray. A modern Pompeii. *Jour. Roy. Naval Med. Service*, 1935.

C. Worster Drought. Intracranial tumours—a synopsis. *Medical Press*, 1935, cxc, 434.

Change of Address

Clifford Allen, 91*a*, Harley Street, W. *Welbeck* 1858.

Births

WILLIAMS.—On May 5th, 1935, at Marigolds, 43, The Gallop, Sutton, Surrey, to Doreen, wife of G. V. L. Williams, L.D.S.(Eng.)—a daughter.

BALDING.—On April 29th, 1935, at 2, Wilbury Mansions, Wilbury Road, Hove, to Ena, wife of Lionel C. Balding, L.D.S., R.C.S.(Eng.)—a daughter.

ROBSON.—On May 7th, 1935, at 20, St. John's Park, Blackheath, to Honor, wife of L. K. Robson, M.B., B.S.—a son.

Death

MONKHOUSE.—On May 11th, 1935, after a short illness, Betty (née Telford), beloved wife of Eric Leonard Monkhouse, M.R.C.S., L.R.C.P. *R.I.P.*

EDS. {D. P. K. P. W. C.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX *8th June* 1935 *Number* 1223

PASSIM

JUNE is here, and with it the two great events of early summer that impinge upon our little world. In the first place, the Derby is upon us. It is unthinkable that we, brought up in the tradition of the South Sea Bubble, should let such an opportunity for a flutter slip through our fingers. All good Guy's men are occupied with the problem, and as to its solution, there are, of course, three possible methods by which success may be attained. The first is the intellectual method, which necessitates the conning of the racing news and the forming of a concept of the form by academic effort. The second is to take a ticket or tickets in a sweepstake or sweepstakes. The third is to judge, as did the ancients in their wisdom, by omen. Between the three techniques there is probably little to choose. The first is condemned by the majority as necessitating an effort likely to be incommensurate with the result. The second is attractive as ridding the speculator of further responsibility in the matter, but it is the third that has the most subtle lure, for by it we take what the gods give us, not by any mere mechanical turning of a drum or selection from a hat, but what they are pleased to bestow upon through personal revelation. This method leads, moreover, to a charming diversity of result; thus, the patients in Evelyn, Patience and Samaritan wards are, we understand, putting their shirts to a man on Fairhaven, while among the Residents, on the other hand, the favourite is Peaceful Walter. The Editors, of course, have their own red-hot tip, but as the time of going to press coincides with the eve of the great race, they will spare the mortification of their readers and refrain from delivering the goods too late.

The second great event is the approach of Whitsun, to which holiday we languishingly look forward. But the College, so far from being visited by the gift of tongues, seems strangely silent in the absence of Mr. Forster, to whose successor, Mr. Blazeby, we offer our congratulations on his appointment. We look forward to the quiet of the Whitsun holiday, when the hammering of Nuffield Block will be hushed and uncouth cries will be stilled of the men who have been spending the last few weeks in raising a series of kegs by ropes from the ground to the roof of the College. What the kegs contain is a source of wonderment; for a brief moment we considered whether they might not hold that mysterious elixir (which has not yet appeared in our Pharmacopœia) of which our most illustrious ancestor, Keats, once sang :—

" Hence Burgundy, Claret, and Port,
Away with old Hock and Madeira,
Too earthly ye are for my sport;
There's a beverage brighter and clearer."

But we doubt it.

THE annual street collection was held this year on Thursday, May 23rd, instead of on Derby Day. A Committee of students organised the collectors, who volunteered in great numbers from the Medical and Dental Schools. An extraordinary degree of zeal and enthusiasm was shown, and the sum collected, £1,240 odd pounds, was in excess of that obtained on many Derby Days when conditions for eleemosynary approach may be described as optimal. Every credit is due to the organisers, who took great pains in the preparation of this successful collection.

The Broadcast Appeal for the Hospital on Sunday, May 9th, by Major Ian Hay Beith has resulted to date in just under £1,000 being sent to the Hospital.

THE unusually lengthy Birthday Honours List contained, it was gratifying to see, a number of Guy's men, past and present, and others connected with the Hospital.

We offer our congratulations to Sir Frederick Gowland Hopkins, Professor of Biochemistry at Cambridge, on being awarded the O.M.; Dr. F. P. Laidlaw, F.R.S., F.R.C.P., of the National Institute of Medical Research, on being created a Knight; Sir Edwin Cooper Perry, Governor and late Superintendent of Hospital, on being created a G.C.V.O.; Mr. E. C. Grenfell, M.P., a Governor of the Hospital, on being created a Baron; Major the Hon. Richard Molyneux, C.V.O., a Governor of the Hospital, on being created a K.C.V.O.

▭

WE should like to congratulate Mr. I. G. Robin and Mr. S. H. Wass on their success in the Final Examination for the F.R.C.S.; Mr. J. R. Forbes on obtaining distinction in medicine in the London M.B., and Mr. H. R. Harley on winning the Golding-Bird Midwifery Prize.

▭

WE have been asked by the secretary of the Cambridge Medical Graduates' Club to publish an account of the activities of the club in order to bring it more prominently to the notice of Cambridge men at the Hospital.

The club is essentially of a social character and now numbers nearly seven hundred members. Its objects are to promote good-fellowship amongst its members by affording them opportunities of meeting men of their own and other years, and to further the interests of the Medical and Natural Science Schools of the University. An annual dinner is held alternately in Cambridge and in London. When in Cambridge it is possible to stay there the night, which is always a Friday, and return on the Saturday morning.

The fee for life membership is one guinea, and this may be sent to either of the honorary secretaries—P. G. Alexander, 1, Park Square, N.W.1, or W. D. Doherty, 10, Upper Wimpole Street, W.1.

▭

THE Treasurer sent the following letter to the Secretary of the Students' Jubilee Collection :—

> The House Committee learned with the greatest surprise and the utmost satisfaction of the brilliant success attending the Students' Collection last week and request me to convey to all concerned our high appreciation and grateful thanks.

Diseases of the Colon

A Clinical Lecture delivered at Guy's Hospital by Nils L. Eckhoff, Esq., F.R.C.S.

GENTLEMEN,—The colon is a part of the alimentary tract that deserves the greatest respect. It is on the whole a silent part of the intestine, and not only are there many difficulties in the diagnosis of its diseases, but there are also peculiar difficulties which surround the treatment of these diseases. I shall endeavour to lay stress on these difficulties as they arise in the course of this lecture.

CARCINOMA

Let us first consider cancer of the colon. This is a disease which is commonest in the fifth—sixth decades of life, though it is not unknown in the twenties and has been described even earlier. The cancer may take the form of an annular encircling tumour, a soft medullary ulcerating growth, or a growth that is prone to mucoid or colloid degeneration.

It is important to realise that the two halves of the colon differ in their morphology and function, and differ also in the type of growth that occurs and in the reaction to this growth.

The right half of the colon is developed from the mid-gut, is chiefly concerned with storage, and is afflicted with large fungating ulcerating carcinomata, which do not tend to produce obstruction. Obstruction only occurs if the ileo-cæcal sphincter is directly invaded.

The reasons for the absence of obstruction are :—

1. The large lumen of the bowel at this site.
2. The fluid nature of the intestinal contents.

The left half of the colon is developed from the hind gut, is chiefly concerned with storage, is afflicted with annular encircling carcinomata, and these are usually associated with obstruction.

I should mention that the relative frequency of tumours in the different parts of the colon is approximately as follows :—

Sigmoid	45 per cent.
Cæcum and ascending colon	25 ,,
Transverse colon	15 ,,
Descending colon	5 ,,
Hepatic flexure	5 ,,
Splenic flexure	5 ,,

Symptoms

The symptoms naturally vary with the site of the tumour, but in general we must be on the look-out for the following. An alteration in bowel habit is most significant, and this, appearing in anyone, especially over the age of forty, demands a very careful investigation. This alteration of habit may be gradual, and may even be difficult to elicit on enquiry, or it may be sudden and unexpected. There is sometimes gradually increasing constipation, sometimes periods of diarrhœa with quantities of mucus and often recog-

nisable blood, or constipation and diarrhœa may alternate in the same patient. In some cases pain is a prominent feature, often referred to the epigastrium; in others there is actual knowledge of the presence of a tumour. Tenesmus only occurs with very low growths, those situated in the recto-sigmoid region or rectum itself.

I have already said that *right*-sided tumours are of the fungating variety, and in these the presence of an ulcerating surface which can absorb toxic products leads to signs of intoxication and profound anæmia. In right-sided tumours one is able to recognise three distinct groups of cases in which the prominent symptom is either dyspepsia, referred to the epigastrium, anæmia and weakness, or the presence of a lump.

Left-sided tumours are usually annular and therefore constipation, leading to obstruction, is to be expected. Borborygmi and visible peristalsis may be present, and tumefaction and distension of the proximal colon follows later. In tumours of the splenic flexure (especially) pain is referred to the right iliac fossa, and this is due to the active efforts of the cæcum in its attempt to expel the dammed-up contents. All the signs of obstruction occur, with enormous distension; vomiting is a late sign. Perforation, either with general peritonitis or abscess formation, is naturally not uncommon when such obstruction is present.

Cachexia, loss of weight and dehydration are symptoms of metastasis, and should never be awaited before establishing the diagnosis.

Diagnosis

Diagnosis, in the absence of obstruction, depends upon recognition of the symptoms mentioned above, together with careful examination of the abdomen. The carcinomatous mass itself may be felt or distended gut may be felt behind the carcinoma. X-ray examination is then undertaken. For this purpose a barium enema is essential. A barium meal may only lead to erroneous diagnosis as in the following case :—

Mr. E. Y., aged 64. Admitted for abdominal pain of six months' standing on the right side, tending to shift across the abdomen. Dull and not related to meals. No nausea or vomiting. Constipation recently severe, lasting 4—5 days, necessitating castor oil. Lost 18 lb. Appetite good. Motions dark, bright blood passed once.

Examination.—Cæcum palpable. Borborygmi at the hepatic flexure. Rigid in epigastrium. Rectum ballooned. Visible peristalsis in abdomen.

X-ray.—Stomach and duodenum normal. Filling defect in descending colon (barium meal only).

Operation.—Colon normal. Carcinoma of body of pancreas found.

On the other hand, in the case of an enema properly administered, carcinoma is readily diagnosed by the visualisation of imperfect filling of a portion of the bowel (filling defect). A correct diagnosis is made in at least 95 per cent. of cases. (In the case of tumours of the cæcum, tuberculosis, actinomycosis and appendix abscess may have to be distinguished.)

Treatment

The treatment of carcinoma of the colon is, in the present state of our knowledge, naturally operative. But operation must be carefully studied. In the presence of obstruction nothing but decompression must be attempted at the first stage. When obstruction does not exist or has been combated, there are certain factors that combine to give the patient the best chance :—

1. Adequate pre-operative treatment. Emptying of bowel where possible, non-residue diet, internal antiseptics.
2. Careful selection of type of operation.
3. Multiple stage operations.
4. Careful choice of anæsthetic.
3. Pre-operative intraperitoneal vaccination with colon bacilli and streptococci.

The mortality for operation is high, and this is partly due to the technical difficulties of anastomosis, the difficulty of producing an air-tight junction, the high infectivity of colon contents, and the ease with which bacilli permeate the colonic wall.

Let me here relate the details of some illustrative cases :—

Mr. S., aged 66. Suffering from slight constipation for one year. Streaks of blood passed with motions during the last few weeks. No pain, no vomiting. Had Parkinsonism for some years.

The abdomen was distended and rigid (the latter due to Parkinsonism). It was resonant, and no tumour could be felt. Rectal examination negative.

He was admitted to hospital. Sigmoidoscopy was performed, but, owing to fæcal accumulation, it was unsuccessful. A barium enema revealed no abnormality. A second sigmoidoscopy was done and a carcinoma seen 15 cm. from the anus. With this knowledge a tumour could be felt with the tip of the finger. A colostomy was performed, but a large secondary in the liver precluded resection.

This case teaches several important points. First, the importance of making a very thorough rectal examination; second, the fact that a barium enema is not always successful in revealing carci-

nomata at the pelvi-rectal flexure; third, the value of sigmoidoscopy; and fourth, the fact that a carcinoma may progress to the stage of secondary deposition without giving rise to marked symptoms.

Mr. H. F., aged 74. Alteration of the bowel habit for 18 months. No power to evacuate without purgatives. No diarrhœa. Some epigastric pain. Loss of appetite. Loss of weight (5 stone in four years).

Slight fulness in left hypochondrium. No peristalsis. Rectal examination negative. Teeth foul.

Barium enema. Filling defect in proximal third of the transverse colon.

While awaiting dental treatment had sudden hæmatemesis, which was so copious as to lead to death in 24 hours.

Post-mortem. Annular carcinoma of transverse colon. Enormous carcinomatous ulcer of stomach adherent to spleen and splenic flexure, but distinct from colonic growth. Secondary in liver.

This case illustrated the presence of carcinomata in two viscera, and provides for a discussion as to the possibility of two independent primaries co-existing.

Mrs. A. I., aged 63. Suffered from "acidity" for two years. Has had clay-coloured stools at times. For six months has had recurrent attacks of diarrhœa and vomiting, lasting 2—3 days. Getting worse lately.

Indefinite mass in the right iliac fossa. Indefinite peristalsis. Procidentia. Rectal examination negative.

Barium enema not retained well, but no abnormality demonstrated. Barium meal: stomach and duodenum, normal. Terminal coils of ileum distended at 12 hours and at 60 hours.

At operation: ileum as big as one's wrist; growth at ileocæcal angle. Resection with ileo-transverse colostomy.

This case illustrates the unusual type of right-sided carcinoma which gives rise to obstruction, owing to involvment of the ileo-colic sphincter.

Mr. W. W., aged 55. Fourteen days' vague abdominal pain, with a tumour in the left iliac fossa persisting after enemata.

Barium enema revealed a filling defect in the descending colon. The channel was wide and the gut mobile.

At operation the carcinoma was excised, using the Rankin clamp and the "obstructive anastomosis" technique. The clamp remained *in situ* for 72 hours. The colostomy was closed later.

Mrs. J. F., aged 49. Always constipated, worse the last six weeks, when the bowels had been confined for 7—14 days. No vomiting. Motions now fluid. Loss of weight.

Barium enema. Complete stoppage of barium in pelvic colon. Cæcostomy performed at first operation. Carcinoma resected later with end-to-end union over a tube. Healed well.

Mr. H. P., aged 38. Three months ago pain in the left lumbar region. Recurred intermittently since. Worse after food. Vomited 3—4 times, always after taking tea. Appetite poor. Bowels not opened satisfactorily; blood noticed on one occasion. Passed quarter pint white fluid with urine, which was offensive, on one occasion. Mass palpable in the left iliac fossa.

Barium enema. Gross constriction of pelvic colon, suggesting diverticula, though carcinoma cannot be excluded.

Colostomy performed. Large mass found adherent to anterior abdominal wall and to bladder.

Four months later mass rather smaller. Attempt at resection unsuccessful. Probably carcinomatous.

Mrs. A. V., aged 55. Seen February, 1934, with two months' history of passage of blood and mucus with motions. Frequent desire to stool. Intermittent pain and sickness. Tender in left iliac fossa.

Barium enema report: diverticulitis.

Seen one year later. Symptoms persisted in spite of treatment. Lately passed lumps of tissue per rectum. One piece examined microscopically, carcinoma revealed.

This is a case where carcinoma developed upon a definite diverticulitis.

DIVERTICULA OF THE COLON

Diverticula may occur in any part of the alimentary tract, but those met with in the colon have special features. They are small, usually only a few millimeters across, and are usually multiple (as many as 200 may exist). They tend to be arranged in parallel rows. At first the diverticula are made up of all the coats of the bowel, but the muscular coat later gives way, leaving a process of mucous membrane covered by peritoneum only.

The pelvic colon is usually involved first, but the condition may spread round to the cæcum. Many theories have been advanced as to the pathology of these protrusions, but it seems certain that they are acquired. They occur usually between the ages of 50 to 70, in stoutish sedentary individuals. They appear at the spot where the blood vessel pierces the wall of the bowel, and, assuming that this is a spot of locally diminished

resistance, intracolonic pressure supplies the force necessary to cause the protrusion.

Butler (B. J. S., October, 1933) had produced diverticula, albeit in the small intestine, by injecting plaster of paris into the lumen of excised bowel and into the arteries supplying it. He suggests that in certain states of distension of the bowel the arteries may produce a tension from without, drawing out a small pouch, which later enlarges. He points out that the arteries in many people with diverticula are arteriosclerotic, and loss of elasticity will aggravate any such state of tension.

The condition occurs, with a slight preponderance in males, in about 5 per cent. of people over 40, and is productive of symptoms in one-fifth of these. Symptoms are not produced by the mere presence of diverticula (diverticulosis), but depend upon complications arising therefrom. The chief of these is inflammation (diverticulitis), while perforation of the bowel may occur, leading either to diffuse peritonitis, local abscess or fistula. Carcinoma occurs in a small percentage of cases, but is probably incidental. Rankin found four cases of diverticula in 679 cases of carcinoma, and four cases of carcinoma in 227 cases of diverticula.

Symptoms of Diverticulitis

Pain is the chief symptom, and this may be sharp, associated with much gas, or slow and boring. Constipation with or without diarrhœa is frequent, and nausea and vomiting not uncommon. A tumour is found in about a third of the cases with diverticulitis. Bleeding is uncommon, and if it occurs it may be purely anal in origin.

Bladder symptoms are to be expected, from simple frequency (where the inflamed bowel is in proximity to the bladder) to the passage of gas with the urine (where a fistula is present).

Diagnosis

This is frequently arrived at on clinical grounds, particularly in the cases where a lump is present. It is easily confirmed by a barium enema examintion. In diverticulosis, the diverticula are best seen when the enema has been evacuated, small pellets of barium remaining trapped in the diverticula. In diverticulitis there is, in addition to the presence of diverticula, superadded evidence of irritability and spasm, with hypermotility of the gut and irregularity of the lumen. This irregularity is concentric, and affects a large portion of the bowel and may thus be distinguished from carcinoma. Proctoscopy is of little direct value, except that it sometimes reveals that bleeding is anal in origin.

Treatment

The treatment is medical in the first instance. Diverticula may be discovered accidentally during routine examination, unproductive of symptoms, and many people doubtless carry these to the grave with no untoward result. It is wise, however, to attempt to diminish the risk of complications by preventing constipation and overloading of the colon. Liquid paraffin three times a day and a non-residue diet are advised. When inflammation occurs in a diverticulum, one must advise rest in bed and ice bags to the abdomen, and rectal irrigation with saline. In a fair proportion of these cases the inflammation will subside.

Surgical treatment is called for at once where perforation takes place into the peritoneum, or where a fistula develops into the bladder or other part. The development of a large abscess will also call for drainage. Where carcinoma is suspected, operation is indicated.

In uncomplicated cases resection might be considered ideal. A large portion of the bowel is frequently involved, and this would entail a wide resection, while it is unwise to subject the patient to the dangers of such an operation if medical treatment is likely to keep the condition in check. The same difficulties exist as were detailed in discussing resection in carcinoma.

Some Illustrative Cases

Mrs. M., aged 53. Three years ago had attack of pain across the abdomen lasting two hours. Since then an attack every 2—3 months, lasting some hours. Two attacks in last 14 days, each lasting for six hours, with vomiting for the first time. Bowels opened regularly. Micturition normal. Tender in right iliac fossa, nowhere else.

Barium enema revealed diverticulosis of whole large gut, with one diverticulum in the small intestine.

Advised non-roughage diet and paraffin.

Mrs. E. S., aged 61. Pain in left loin for a few years made worse by movement and relieved by nothing. Pain radiates to groin. Formerly intermittent, more constant for three weeks. Tenderness in left hypochondrium and left iliac fossa. Small rounded tumour in left iliac fossa.

Barium enema. Multiple diverticula of descending and pelvic colon. No evidence of diverticulitis.

Mr. A. A., aged 64. Three years' constipation relieved by medicine. Twelve weeks ago had complete constipation for three days, in spite of aperients. Two weeks later generalised abdominal

pain, flatulence and marked constipation. One week ago copious bleeding from rectum (¾-pint), continuing for 24 hours. Colonic washout had poor result.

Sigmoidoscopy negative.

Barium enema. Multiple diverticula of pelvic colon. No evidence of diverticulitis or carcinoma.

Mr. W. S., aged 70. Many years severe abdominal pain, worse last few weeks. Constipation. No vomiting. Loss of appetite. Loss of weight. Micturition normal.

Multiple neurofibromatosis discovered on examination, with herpes in the right flank (12th thoracic nerve distribution). Nil else.

Barium enema. Diverticula arising from colon, with diverticulitis of the descending colon. No obstruction.

Mr. J. F., aged 58. Four years ago had abdominal pain which passed off. Had one or two recurrences, with twinges lasting a few hours. One week ago had hypogastric pain, which has continued since, lasting all day, but varying in intensity. Relief from getting bowels opened. Stools loose with repeated actions. No blood, but slime present. Relief from emptying bladder. Tender hypogastric tumour, with tender lump filling pelvis on rectal examination.

Barium enema revealed diverticulitis, and sigmoidoscopy later revealed much œdema and injection of the mucous membrane.

Mr. A. W., aged 64. Three weeks ago had sudden pain in the left iliac fossa. Diarrhœa at onset of pain, ceased when pain ceased. Tender several days after attack. Not constipated. Micturition normal.

Tender lump palpable in left iliac fossa.

Barium enema. Filling defect suggestive of carcinoma.

Resection over tube. Specimen revealed diverticulitis.

This case indicates the difficulty of differentiating diverticulitis from carcinoma by X-ray or even by palpation within the abdomen at operation.

ULCERATIVE COLITIS

This is more essentially medical than the other conditions I have described, but it frequently falls to the lot of the surgeon to diagnose the disease in the first instance, while at other times his help may be required in the later stages. The recognition and description of the ulcerative colitis is intimately bound up with Guy's Hospital, where Wilks and Moxon (1875), Hale White (1888), Cameron and Rippman (1909 and 1910), and more recently Hern (1931), have all contributed to the literature.

Ætiology

This has been the subject of much research and debate. Hurst is of the opinion that many cases are due to the bacillus of dysentery, while others maintain that the ordinary bowel organisms are responsible. The Mayo Clinic have identified a diplostreptococcus with the disease in 80 per cent. of cases, have reproduced the disease in rabbits, and have found the same organism in periapical tooth abscesses and tonsillar abscesses. Other observers have not been able to confirm these findings.

I should like to quote one case that I saw recently with Dr. Hern at St. John's Hospital, Lewisham.

Mr. P. M. was admitted to hospital for pain in the left loin, associated with the presence of a lump in this situation. There was some debate as to the nature of this lump, which was rounded, fixed and tender.

Barium enema revealed marked narrowing of the colon with loss of haustration, and the narrowing corresponded with the situation of the lump. It was suggested that the tumour might represent an inflammatory mass around a colon affected with colitis. A pyelogram later revealed complete absence of filling in the left kidney region, and a shadow at the lower margin of the left sacroiliac joint resembling a calculus.

A cystoscopy was performed under local anæsthesia, at which a catheter was passed 5 cm. up the left ureter, where it impinged upon the suspected stone. This operation lasted a few minutes only.

A few days later the patient developed a sore throat, from which a hæmolytic streptococcus was recovered, and death followed in 48 hours from streptococcal septicæmia.

Hæmolytic streptococci were recovered from the pyonephrosis, from the colon and from the tonsillar fossæ.

The disease occurs chiefly in the second—fourth decades of life, and is often associated with :—

1. Upper respiratory tract infections.
2. Disease which lowers the general resistance.
3. Operation on the upper respiratory tract.

The colon is involved in a diffuse inflammation, affecting the distal portion first. There is at first hyperæmia and œdema of the mucous membrane, with the formation of submucous abscesses. These later break down, leaving irregular ulcers. The ulcers tend to enlarge and, in advanced cases, little normal mucous membrane is to be found. The bowel wall becomes infiltrated and thickened, and thrombosis occurs in the blood vessels. At a later stage stricture formation and polyposis of the mucous membrane are to be expected, while

complications include arthritis, splenomegaly, nephritis, endocarditis, perforation and malignant disease.

Symptoms

The passage of blood and pus per rectum usually brings the patient to the physician. Abdominal pain and tenderness follow. There is loss of weight and anæmia, producing an anxious appearance and a greyish-yellow complexion. There is usually diarrhœa, and the stools are made up of pus streaked with blood. Pyrexia is frequently present, and the pulse rate is increased. Hern regards a pulse rate of 120 of bad prognostic significance.

On examination there is diffuse abdominal tenderness, and in some cases the colon may be palpable. There is tenderness and spasm of the sphincter ani. On proctoscopic examination the characteristic changes are usually to be found, for 95 per cent. of cases involve the rectum.

These changes are :—

1. Diffuse inflammation of the bowel.
2. Œdema of the mucous membrane.
3. Yellowish submucous spots.
4. Ulceration leading to a moth-eaten appearance.
5. Fibrosis and diminution of lumen.

X-ray examination reveals the colon as a thick-walled inflexible tube, with irregularity of its surface. There may be narrowing at intervals leading to an appearance resembling a string of sausages.

Treatment

The different forms of treatment that have been tried would fill a book. At one time surgery was frequently attempted, without much success. Every type of antiseptic has been used for irrigation of the bowel. Non-specific vaccine therapy and antidysenteric serum have met with success in some hands. Parathormone and calcium has been recommended, as also ionisation of the colon with copper sulphate.

At the Mayo Clinic 75 per cent. of cures are claimed on the following regimen :—

1. Immunisation by vaccination or desensitisation against the offending bacteria.
2. Removal of all distant foci of infection.
3. Institution of proper feeding.

In the acute stages serum and fluids of high calorie value are given and transfusions may be necessary. The colon is washed out with normal saline solution. Later a diet of high calorie value with low residue is allowed. Vaccines are now administered for six—eight weeks, and at intervals during the next two years. In cases that do not respond to this form of treatment ileostomy has been performed as a drainage operation, with some success.

The results of treatment of this disease at Guy's Hospital have not been so happy, for Hern, in reviewing 50 cases, found an immediate mortality of 28 per cent., which rose to 40 per cent. upon a follow-up. In those cases where an operation had been performed the mortality was at its highest, but it must be conceded that it is probable that the most intractable cases were referred to the surgeons.

It is important to consider whether there is *any* indication for surgery in ulcerative colitis. Certain complications demand surgical attention, such as perforation.

Mrs. S., admitted March 19th, 1934, from my Out-Patients to which she had been sent with a diagnosis of hæmorrhoids. I was able to exclude hæmorrhoids on proctoscopy, and to diagnose ulcerative colitis on sigmoidoscopy. She has complained of bleeding per rectum for some time, pain on defæcation and constipation.

There was general tenderness of the abdomen, emaciation and anæmia.

In spite of all forms of medical treatment she deteriorated gradually, the hæmoglobin falling to 30 per cent.

June 26th, 1934. Perforation was diagnosed and operated upon by a colleague. Deterioration continued, and the patient died later. Many large ulcers were found in the ascending and transverse colon.

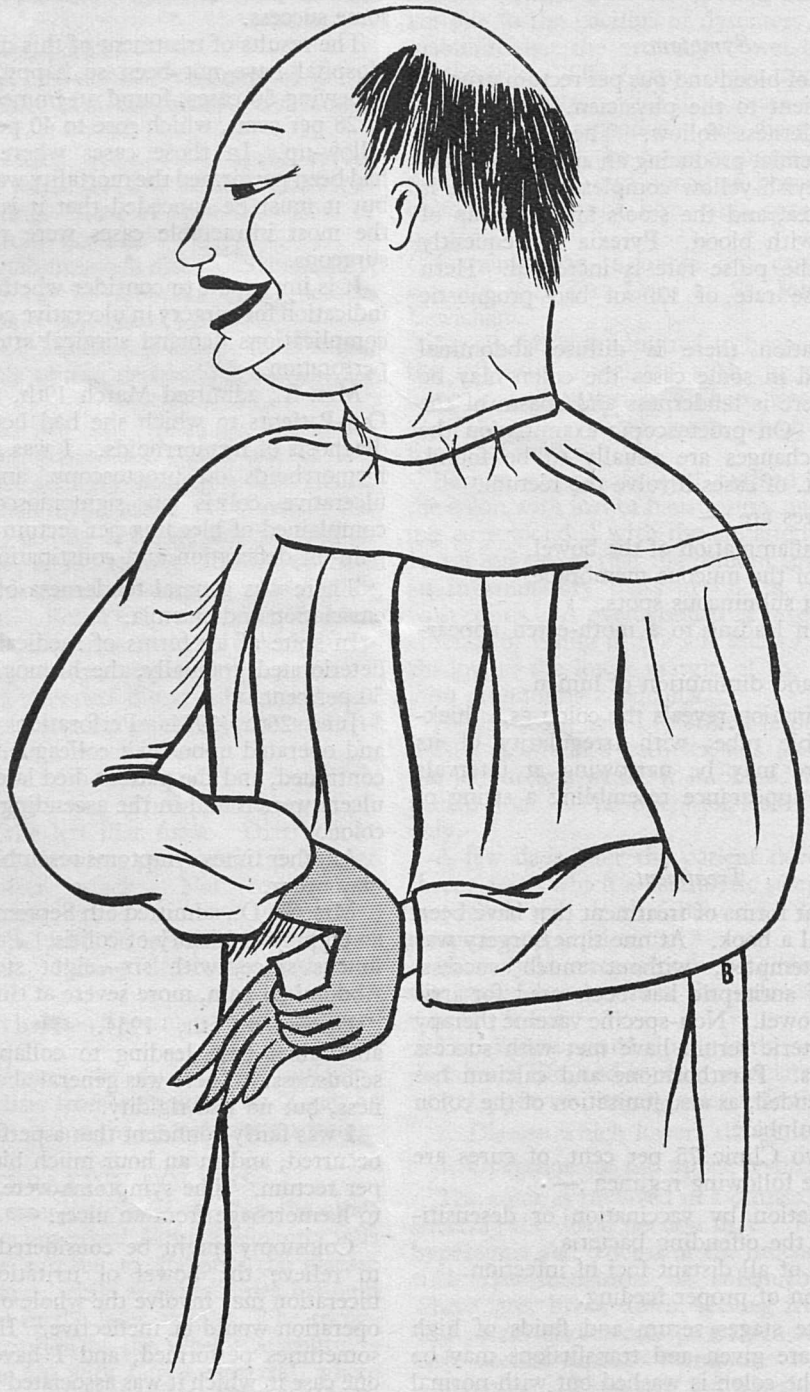
At other times symptoms resembling perforation may occur.

Mrs. W. D., admitted 6th September, 1934, with an eight-year history of colitis. Passed blood and mucus since, with six—eight stools per diem. Abdominal pain, more severe at times.

December 6th, 1934. Had sudden acute abdominal pain leading to collapse and unconsciousness. There was general abdominal tenderness, but no real rigidity.

I was fairly confident that a perforation had not occurred, and in an hour much blood was passed per rectum. The symptoms were, therefore, due to hæmorrhage from an ulcer.

Colostomy might be considered in an attempt to relieve the bowel of irritation, but as the ulceration may involve the whole of the colon, this operation would be ineffective. Ileo-colostomy is sometimes performed, and I have recently seen one case in which it was associated with a complete disappearance in all symptoms, and another in which it was done too recently to be able to judge of its value.



N. L. E.

Mrs. G. W., aged 47. Attended my Out-Patients on account of generalised abdominal pain, colicky in nature, slightly relieved by having the bowels opened. Constipation for three days one month ago, otherwise normal. Stools normal in appearance. The whole colon, from the cæcum to the pelvic colon, was easily palpable on examination.

Admitted under Dr. Mutch. Washouts were required at first to empty the colon, but later evacuations occurred twice a day without assistance. Blood was found in the stools on five occasions.

Barium enema revealed loss of haustration and narrowing of the distal colon, with patchy irregularity of the outline of the proximal colon. The colon remained easily palpable.

Transferred to Martha under Mr. Slesinger. At operation the whole colon was found to be grossly thickened, owing to diffuse inflammation of its walls. An ileo-colostomy was performed.

The Role of Heavy Metals in Animal Metabolism

A Paper read before the Physiological Society on 7th December, 1934, by J. R. E. Richardson, Esq.

MR. CHAIRMAN and GENTLEMEN,—Of the sixty-three metals isolated up to the present, at least twenty-five have been found in various animal cells, but of these twenty-five less than twelve occur in vertebrate cells, and it is with these last that we are mainly concerned in this paper.

The methods of identification of these metals are of great interest. Few are present as more than mere traces, and therefore methods other than chemical have to be adopted to determine their presence, notably the spectroscope. By this method the emission spectra of the incinerated material is examined either optically or photographically, and in this connection much work has been done by Ramage and Zbinden.

Of the alkali metals I will say nothing, except that sodium, potassium, calcium and magnesium are all essential to life, and the study of each of these forms a separate subject on its own.

Apart from these, there remain iron, zinc, copper and manganese, each of which is also essential to life. In addition to these latter, there are other metals occurring in smaller quantities, which are not essential to life, but appear to act as accessory factors. Of these I will mention only aluminium, rubidium and tin, and add that the physiological significance of these are still but very imperfectly understood.

Iron is present in the hæmoglobin of the blood in the form of hæmatin or hæm, and in the tissues as a constituent of cytochrome. In both these forms it is connected with respiration. Hæmoglobin possesses a constant proportion of hæmatin, and it is the presence of this that confers on the hæmoglobin its power to transport oxygen.

The hydrochloride of hæmatin is hæmin, and if this latter is charred, a very potent catalytic agent is formed, which aids in the oxidation of organic substances. This catalyst is considered by Warburg to be identical with his " Respiratory ferment," which is responsible for tissue oxidation. Warburg's Ferment can be oxidised by molecular oxygen, and it again yields up this oxygen on coming into contact with the reduced cytochrome of the tissues.

This enzyme will not function in the presence of a cyanide, owing to the formation of a complex iron-cyanide molecule, and Warburg, who claims to have been able to demonstrate not only the presence, but also the amount of his enzyme, has shown that the amount of cyanide required to act as a poison is equal to the amount of iron contained in his enzyme.

As iron is so essential to respiration, and therefore to life, it is necessary that the amount present in the body shall be kept up to a minimum of at least four, and preferably five or six, grammes. Iron occurs normally in a mixed diet, being present especially in meat and green vegetables. On reaching the stomach the iron forms an inactive proteid, which is absorbed into the blood stream on reaching the duodenum. Later most of it is re-excreted into the large intestine as ferrous sulphide, in which form it ultimately leaves the body. That part of the iron which is retained by the body is carried to the liver, via the portal system, and is there stored as free iron.

The various processes outlined above probably represent the way in which all the other metals are dealt with by the body.

In addition to other sources of iron from the body, one of the most important has still to be mentioned. Owing to the continuous destruction of erythrocytes (largely in the spleen), iron is constantly being released into the blood stream, and part of this is excreted, thus creating a deficiency which has to be replenished from the liver storage of iron.

The occurrence of iron in the fœtus is of interest. The milk of many animals is extraordinarily deficient in iron (only 1-2 mg. per litre), and for

this reason it is necessary that the new-born animal (including the human) shall have an excess accumulation of iron at birth to carry it through the normal period of lactation, until it is able to take a mixed diet containing sufficient iron to supply the body's normal requirements. The normal fœtus contains up to 12 grs. of iron at birth, and this is considerably supplemented during the first year of life, owing to the enormous hæmolysis which takes place during that period, the erythrocyte count falling from $6\frac{3}{4}$ million to $5\frac{3}{4}$ million, and thereby releasing a large quantity of iron. Even with this added amount of iron, the quantity of hæmoglobin in a given volume of blood falls by 50 per cent. during the first year of life. In order that the fœtus may accumulate this reserve of iron, it has been demonstrated that the pregnant female not only requires a larger intake of iron, but that she also retains actually 100 per cent. more than in the non-pregnant state.

It is also of interest to note that if mature animals are fed solely on milk (to the exclusion of all other food) they rapidly develop a nutritional anæmia, but the substitution of a normal (iron-containing) mixed diet leads to an equally quick improvement, and complete recovery.

Let us now turn to the consideration of the functions of *copper*. This is also one of the metals which is essential to life, and it has been shown, particularly, to be essential to the formation of hæmoglobin.

In connection with the uses of iron by the body it was realised 25 to 30 years ago that the intake of pure iron into the body produced no real improvement in cases of nutritional anæmia due to defects in iron metabolism, but it was not until 1928 that Hart, Steenbock, Waddell and Elverhjem began experiments in an effort to discover what were the additional factors or accessory substances which enabled the iron to be satisfactorily metabolised, and thus made use of in the regeneration of the blood.

After unsuccessfully experimenting with small quantities of numerous physiologically rare metals, combined with the iron, they received a sample of liver extract which Cohn had previously found beneficial in the treatment of cases of anæmia when administered with iron. They carefully repeated Cohn's experiments with their own cases (rats), and found an increase of 50 per cent. in hæmoglobin. On analysis the liver extract was found to contain small quantities of copper. Hart then demonstrated that 0.025 mg. of copper per day would enable a sufficient amount of iron to be metabolised to bring about a cure of the anæmia.

This catalytic action of copper is at present the only one definitely authenticated, but it would appear from the presence of much larger amounts of copper occurring in many animals other than human beings that it probably subserves an additional number of metabolic functions.

It is difficult to know the exact nature of these functions, but it has been demonstrated in the case of some invertebrates (*e.g.*, arthropods and molluscs) that copper in the form of hæmocyanin replaces iron in the blood pigment.

In contrast to copper, *Manganese* plays no accessory part in the metabolism of iron to form hæmoglobin, but there seems to be no doubt that manganese is essential to life, and also to normal reproduction. Attempts made to prove that manganese played a similar role to copper in the regeneration of hæmoglobin were proved by Hart to be incorrect.

The chief work relating to manganese has been done, by Drent, in connection with reproduction, and there is ample evidence to prove that the reproductive systems of both male and female are profoundly affected by an absolutely manganese-free diet. Incidentally, it is extremely difficult to secure a chemically manganese-free diet as manganese occurs as a natural impurity of iron, which, of course, must be given in order to prevent the effects of an iron-free diet from occurring.

It has been found that as little as one part per 100,000 of manganese is sufficient to supply the requirements of a normal animal. For this and other reasons it was necessary to resort to spectrographic methods in the preparation of manganese-free meals. The effects of this diet are particularly noticeable in the male, where a complete and permanent degeneration of the germinal epithelium occurs, nearly always resulting in sterility. In the female the effects are not less important, and certainly more obvious. In the very unlikely event of pregnancy occurring or going to term, the offspring die very rapidly, owing to the absence of mammary tissue, and to the fact that maternal instinct is entirely lacking—in short, owing to neglect.

If (although quite unlikely) such offspring can be successfully reared by artificial means, they will be very stunted in growth.

All these symptoms point to a very serious condition of endocrine unbalance, and the particular hormone which seems not to be functioning is the anterior lobe of the pituitary, suggesting that this hormone cannot act in the absence of manganese from the tissues. No work has yet been done which either proves or disproves these facts conclusively.

With regard to *Zinc*, this metal is analagous to manganese in its action in the body, except that

absence or gross deficiency of zinc does not lead to stunting of growth. At the same time it must be regarded as essential to life.

The chief interest of *Aluminium* in relation to the body lies in its alleged toxicity. Various attempts have been made during the past few years to cause alarm by emphasising the possible risks run by the recent extensive use of aluminium cooking utensils. In this connection it is only necessary to observe that, whereas Massatch demonstrated that no more than 15 mg. of aluminium oxide were absorbed in a day from the use of aluminium utensils by an ordinary mixed diet, the B.P. dose of this is many times greater, and it is well known that these doses are practically always on the low side. This fact alone should be sufficient to indicate a practical absence of risk.

A word must be said on the *Inter-relationship between Metals*. The synergic action of calcium and iron has been thoroughly worked out, and it has been found that unless there is a certain very low minimum (0.08 per cent.) of calcium present, there is very little fœtal store of iron in the liver.

The relationship of copper to iron has already been discussed in this paper, and, allowing for the very important accessory part played by copper, it may be that in the future some forms of anæmia will be proved to be ultimately due to lack of calcium. Indeed, Davidson maintains that "a normal blood level can be maintained on a diet rich in calcium, but only moderate in iron, but that anæmia will occur on the same iron intake if the calcium is reduced," thus proving the immense importance of calcium, not only as a primary substance, but also as an accessory metabolic factor.

In conclusion, taking all the facts into consideration, one is tempted to wonder, in view of the tremendously important rôle played by these heavy metals in the bodily economy, whether they are not only of equal, but of far greater importance than the much-vaunted vitamins, to which in recent years so much power over life and death has been assigned.

Dental Benefit under the National Health Insurance Act

A Paper read before the Guy's Hospital Dental Society on 19th March, 1935, by D. E. Holdway, Esq.

MR. PRESIDENT and GENTLEMEN,—The subject of my paper is one upon which the dental student receives no instruction. It deals with facts as they exist to-day and a state of affairs which, although they may be modified, are likely to remain in force during the whole course of our professional careers. I think you will agree with me, therefore, when I submit that it is a subject about which the prospective dental surgeon should have some knowledge.

In order that the subject may be understood, it is necessary first to have a rough idea of what National Health Insurance means, so perhaps I may be excused if I try to elucidate this matter before touching upon the Dental Benefit Regulations themselves.

The scheme of National Health Insurance, under the National Health Insurance Act of 1911, of which there have been no less than 18 amending Acts, is compulsory and contributory. It has survived the financial stress of the post-war years, and there is no doubt that it has come to stay. It is under the general supervision and control of Central State Authorities, namely, the Minister of Health for England and Wales, the Department of Health for Scotland and the Ministry of Labour for Northern Ireland, with a co-ordinating body called the National Health Insurance Joint Committee.

Approximately 18 millions of the population are covered by the Act, embracing all persons between the ages of 16 and 65, working under a contract of service for an employer, with the exception of non-manual workers whose remuneration exceeds £250 per annum, and a few others. The finance of the scheme is based upon the principle of insurance. Its income consists of the contribution (or premium) which is partly paid by the employed person, partly by the employer and partly by the State. The Act gives the employer the authority to deduct the employed person's share from salary or wages, and the employer is responsible for paying the contribution by affixing a stamp to a contribution card.

The administration of the scheme is entrusted mainly to what are called Approved Societies. The monies received for Health Insurance from the sale of Insurance Stamps finally reach the Ministry of Health and accumulate in a fund called the National Health Insurance Fund. The Approved Societies receive credits in that Fund according to the value of the stamps on the contribution cards surrendered by their members. From this Fund are drawn the monies required by societies for the cost of benefits and for the administration of those benefits, and it is when the contributions are returned to the insured person in cash or in kind by way of benefits, that

the State's portion of the contribution is added. One-seventh (one-fifth in the case of a woman) of the cost of all benefits is provided out of the Exchequer, and adjustments of the Approved Societies' credits in the Fund are made accordingly.

Approved Societies are not palatial buildings inhabited by officials of various degrees of importance; they are just groups of insured persons acting together to administer to themselves the benefits of the N.H.I. Act. There are approximately 7,000 of such groups, each self-contained, and the membership of each group may vary from, say, 500 in a small private society to approximately 2,000,000 in a large society like the Prudential. The Management is appointed by, and is capable of being removed by, the members. Each society is charged with the responsibility of its own affairs, each is imbued with the idea of its own progress, and thus strives to give the best possible benefits to its members.

The assets and liabilities of societies are valued every five years by a Government Actuary. If a deficiency is disclosed, *i.e.*, if the expenditure on claims for the statutory benefits exceeds the contribution income, they are allowed to draw upon the reserves set aside under the Act—called the Contingencies Fund and the Central Fund.

If, upon valuation, a *surplus* is disclosed, the Government Actuary advises the society how much of the surplus is disposable and how much must be carried forward to the next valuation. "Disposable" means that it may be spent by the society in providing additional benefits for its members.

All insured persons are entitled to the statutory benefits, which consist of Medical Benefit (*i.e.*, Panel doctor and medicine), Sickness Benefit (*i.e.*, payments of cash during sickness for 26 weeks), Disablement Benefit (*i.e.*, a continuation of cash payments at half the rate of the sickness benefit for so long as the member is incapable of work), and lastly, Maternity Benefit (*i.e.*, the payment of £2 on the confinement of the wife of an insured member).

It was anticipated that, in most cases, the contributions would be more than sufficient to meet the cost of the statutory benefits, but it is only those societies which have been prudently managed and in which the sickness experience has been light which are in the fortunate position of being able to give additional benefits to their members.

The term "additional benefits" is somewhat of a misnomer. They are only such in the sense that they are additional to the statutory benefits of the Act, but they were as much a part of the *anticipated* benefits when the Act was first introduced as the statutory benefits. Actually, they are unexpended balances.

Each society having a disposable surplus has the right to choose its own additional benefits from a schedule laid down in the Act, and also to frame its own scheme. Only those members who have helped to create the surplus by their contributions are eligible to participate in the scheme, and therefore Treatment Benefits can only be given after three years' membership. These benefits are a right to which the insured person is entitled, and there is no semblance of charity or favour and no investigation into private circumstances.

It will be seen, therefore, that at present additional benefits such as Dental Benefits can only be obtained by those persons who have been insured for three years and belong to Approved Societies whose actuarial valuations have disclosed a surplus and whose Committees of Management have elected to give Dental Treatment as one of the society's additional benefits under a scheme which remains in force for five years; but, nevertheless, there are a considerable number of persons enjoying such benefits.

Dental treatment remains—and is always likely to remain—the most popular treatment benefit. It is, however, a costly benefit, and it is the experience of most societies that they spend more than twice the amount on dental benefit than they spend on all the other additional treatment benefits put together. But, having once given this benefit, Approved Societies seldom drop it if they have any funds available for the purpose at the following valuation, because it is a benefit which has a good effect upon the health of their members and thus it helps to reduce sickness claims.

I must now pass to the Dental Benefit Regulations themselves, and I want you to assume that an insured person has made an appointment and has arrived at your surgery and produced a dental letter, issued by his Approved Society.

Part A of the form instructs the patient to hand same within 21 days from date of issue to any registered dentist whom he may choose and who is prepared to undertake the treatment in accordance with the conditions and scale of fees prescribed by the Dental Benefit Regulations, and it goes on to say that the dentist will then submit an estimate to the society, and thereafter the society will notify him as to the amount they will contribute. Where it is necessary for him to pay a portion of the cost, the dentist may require such portion to be paid before commencing and proceeding with the work.

Part B of the form is addressed to the dentist. It states the patient's age and asks him to examine

the patient and enter on the back of the letter the details of the necessary treatment, together with an estimate of the cost in accordance with the conditions and scale of fees. Where the cost of the whole of the necessary treatment does not exceed 10*s*., it may be proceeded with forthwith. Where the cost would exceed 10*s*. an estimate *must* be submitted to the society for approval before any part of the work is executed, except in the case where emergency treatment is required. In these cases the dentist is authorised to carry out emergency treatment to the extent of 10*s*.

Having accepted the dental letter, it is the dentist's duty to examine the patient and enter on the back of the letter the details of the necessary treatment and its cost. Having done so the dentist signs Part C of the letter (addressed to the society), in which he agrees to carry out the work in accordance with the Dental Benefit Regulations. After filling in the date of presentation of the letter and signing and dating Part C, it is posted back to the society.

On receipt of this letter the society notes the details of treatment required and, if the charges are in order, the letter is signed at Part D by the society and returned to the dentist. In this part it approves the estimate and states the amount it will contribute. This part of the letter goes on to state that when the work is completed a remittance for the society's proportion will be sent on receipt of the form with Part E and the member's certificate to the effect that the treatment is completed, duly signed.

Part E, which has to be signed by the dentist and forwarded to the society within one month after completion of the treatment, states that the dental treatment is completed and certifies that any dentures included in the estimate have passed into possession of the member. The dentist, therefore, claims the payment of the society's contribution. Where any lesser number of teeth than that shown in the estimate has been placed on any denture, or any other modification made, the corresponding reduction has to be made in the amount claimed. All that remains is for the society to forward their cheque for the required amount, the member's share having already been obtained.

It sometimes happens that after the patient has been examined and the estimate has been sent in the patient does not return for treatment, and in such a case the dentist can claim a fee of 2*s*. 6*d*. for examination and report. This is allowed for in Part F of the letter.

DENTAL BENEFIT REGULATIONS

It is now necessary to describe in more detail the conditions of service and the fees which may be charged for the treatment given to insured patients. Before doing so, however, it is necessary to give a brief summary of the National Health Insurance Dental Benefit Regulations of 1930 in which these details are included.

These Regulations state that there shall be a body known as the Dental Benefit Council for the purposes of:—

(1) making arrangements for securing to those members of societies who are entitled to dental benefit a satisfactory service of dental treatment; and

(2) exercising, subject to the general responsibility of the Minister of Health, supervision over the administration of dental benefit and over the provision of dental treatment towards the cost of which payment may be made thereunder.

This, then, is the all-powerful body with which most of us will probably be concerned at some time or another. It consists of twelve members representing dentists, twelve members representing societies, and four members representing the Government Departments. Elaborate regulations are laid down for the election of members to this body.

The Regulations lay down that the services of Regional Dental Officers shall be available for (1) advising societies, dentists and the Council on questions arising in connection with estimates given by dentists and (2) advising the Minister of Health and the Council, as may from time to time be required, with reference to the administration of dental benefit by any society.

The cost of the service of Regional Dental Officers is paid out of funds available for dental benefit by Approved Societies in proportion to their expenditure on the provision of dental benefit.

It is a condition for the receipt of dental benefit that a member shall, if required by his society, submit himself for examination by a Regional Dental Officer, and, if the member refuses to submit to such examination or, without reasonable cause, fails to attend for that purpose, the committee of the society have power to impose a penalty by way of a fine not exceeding 10*s*., and, if the fine is not paid within four weeks, the member may be suspended from dental benefit for a period not exceeding one year.

This service is very useful to both Approved Societies and the dentists, especially in cases where the patient either questions the dentist's estimate or refuses to submit to the treatment required as estimated by the dentist.

The Committee of Management of every society administering dental benefit is required to fix the

proportion of the cost of dental treatment to be paid by the society, and may vary that proportion from time to time, having regard to the funds available, but the proportion shall not, in any case, be less than one-half of the cost of treatment.

Those entitled to the benefit have free choice of dentist, and the Approved Society is not allowed to induce any member to apply for treatment to any particular dentist, neither is the society allowed to offer any inducement to a dentist to provide treatment at a rate less than the scale fees, but nothing in the Regulations prevents a society from approving an estimate submitted to it for treatment at less than the scale fees.

A society is not allowed to refuse to approve an estimate on the ground that any item of treatment specified therein is not necessary or desirable, unless the estimate has first been referred to the Regional Dental Officer and his advice thereon received.

If any question arises between a dentist and a society as to whether there has been any failure on the part of the dentist or the society to comply with the provisions of the Regulations, such question is determined by the Dental Benefit Council and elaborate regulations are made for the setting up of reference committees and the procedure of such committees for this purpose.

CONDITIONS OF SERVICE

It is a condition of service under the National Health Insurance Scheme that a dentist shall, in providing dental treatment, apply the same degree of skill and attention as he would apply in the case of treatment to a private patient.

He shall, in each case, keep a record showing the name of the insured person, the date or dates on which any treatment was given, and the nature of such treatment. He is not entitled to suggest, demand, or accept from any insured person, any fee in addition to the charges set out in the dental letter.

Notwithstanding the acceptance of the dental letter by a dentist and the completion by him of Part C of that letter, he may retire from the case at any time before any treatment, other than examination or emergency treatment has been begun, but where he so retires, he must refund to the insured person any sum received from him, and the society and the insured person are relieved from any liability other than in respect of examination and emergency treatment.

He may decline to commence or proceed with treatment until he has received payment of the proportion of the cost payable by the insured person.

He may charge the insured person as a private patient for any treatment completed prior to the presentation of the dental letter, but with respect to any treatment not so completed, towards which the society agrees to contribute, the payment shall be on the basis of the scale fees.

The estimate must set forth the whole of the treatment which, in the dentist's opinion, is necessary to secure reasonable dental efficiency, having regard to the health of the insured person. In doing so he must delete from the numerical chart included in the estimate the particulars relating to any natural teeth missing from the mouth.

The society may, if it thinks fit, refuse to make any payment by way of benefit if the insured person desires treatment other than that specified in the estimate, or is not prepared to undergo the treatment, or any portion of the treatment, recommended by the dentist. Where, in the opinion of the dentist, special conditions exist, a special estimate may be submitted instead of, or in addition to, the estimate in the dental letter, and such special estimate shall be accompanied by a technical report, setting out the reasons necessitating the special treatment together with an outline of the nature of the treatment proposed to be given, and it is open to the society in such a case to decline to pay a larger part of the cost than would be payable on the basis of the normal scale fees. In practice, however, the society usually agrees to pay the usual proportion of such a special estimate, provided the charge is reasonable.

Where the whole of the necessary treatment exceeds ten shillings the treatment in the estimate shall not be proceeded with until the dentist has received back from the society the dental letter with Part D completed and signed.

Where the cost of the whole of the necessary treatment does not exceed ten shillings the dentist may complete the treatment and complete and sign Part E of the letter and not bother about an estimate.

SCALE OF FEES

1. *Scaling and treatment of the gums per individual.*—7*s.* 6*d.*, but not chargeable in respect of a jaw in which a denture of eight or more teeth is supplied.

This fee covers the provision of necessary treatment for all ordinary or simple disorders of the gums, even though more than one visit by the patient for treatment may be required. Special estimates for treatment of the gums are not to be submitted unless the conditions are very exceptional.

Any scaling and treatment of the gums which is necessary in a jaw in which a denture of eight or more teeth is supplied is to be carried out without charge.

2. *Fillings*, per filling.—7*s*. 6*d*., with a maximum charge of 12*s*. 6*d*. for any one tooth.

The maximum fee of 12*s*. 6*d*. is to include all the fillings in any given tooth which are necessary to restore the tooth to a sound condition.

3. *Root treatment*, per tooth.—7*s*. 6*d*., with a maximum charge of 17*s*. 6*d*. for fillings and root treatment in any one tooth.

Root treatment includes the filling of each root of the tooth, but does not include the insertion of any filling in the tooth itself, and does not include any dressing or treatment of the pulp of a conservative nature.

4. *Extractions*, per tooth.—(*a*) With local anæsthetic, 2*s*. 6*d*.; maximum for upper or lower, 12*s*. 6*d*.; maximum for upper and lower, £1 2*s*. 6*d*. (*b*) Extractions with general anæsthetics: Extraction fee, 2*s*. 6*d*. per tooth; maximum as for local; simple administration fee per case, upper or lower, 7*s*. 6*d*.; upper and lower, 10*s*.; prolonged anæsthesia (12 or more teeth at one operation)—extractions, £1 2*s*. 6*d*.; anæsthetist's fee, £1 1*s*.

The maximum fee for extractions from the upper or lower jaw applies, although extractions from both jaws may be involved. The maximum fee of £1 2*s*. 6*d*. for extractions from both jaws comes into operation only when not less than five teeth are extracted in one jaw and not less than four in the other jaw.

Any estimate which includes a general anæsthetic, whether simple or prolonged, must be accompanied by a brief statement of the reasons for the inclusion of this item in the estimate.

Any proposal to extract one, two or three teeth by means of a general anæsthetic must be made the subject of a special estimate and be accompanied by a special report setting out the reasons for the use of the general anæsthetic. Unless the society approves the special estimate, its liability shall be confined to the payment of the extraction fee of 2*s*. 6*d*. per tooth, but no objection may be raised by a society to the payment by an insured person of the administration fee laid down in the scale of fees.

The anæsthetist must in all cases of prolonged anæsthesia be a registered medical practitioner or a registered dentist (other than the dentist performing the extraction) skilled in the administration of a suitable general anæsthetic and included in a list approved by the Council.

5. *Dentures*.—One-tooth and two-teeth dentures, £1 1*s*., with an increase of 5*s*. per tooth up to a maximum of £2 15*s*. Maximum fee for upper and lower, £5 10*s*.

Impressions for permanent dentures are not to be taken within a period of three months from the date of the final extraction, except with the consent in writing of the society, but in no case are impressions for permanent dentures to be taken, even though three months may have elapsed, until the dentist is satisfied that absorption is sufficiently completed for permanent dentures to be supplied.

When, in appropriate cases, at the request of the insured person the dentist proposes to supply dentures before the mouth is ready for the insertion of the permanent set, he shall explain in writing the circumstances to the society and, if the society declines to make payment in respect of temporary dentures, the insured person shall be entitled to obtain them at scale fees from the dentist at his own expense.

All necessary adjustments of dentures within a reasonable time after completion are to be made by the dentist without additional charge.

All necessary bands, wires and fastenings must be supplied without extra charge.

No charge either to the society or the patient is to be made by the dentist for placing a third molar on any denture or remake.

The charge for a denture is to be based on the number of teeth actually and necessarily supplied on the denture.

6. *Repairs*.—7*s*. 6*d*. for the first, 5*s*. for each subsequent item on a denture as stated below, with a maximum for each denture of 12*s*. 6*d*. in respect of items 1, 2 and 4, and of £1 in respect of all items :—

(1) Cracks, fissures or fractures of dentures.

(2) The replacing of a loosened tooth or loosened band or wire.

(3) The adding of one new tooth or one band or one wire.

(4) An extension of the plate, even when that extension embraces part of a natural tooth.

7. *Remakes*.—One tooth and two-teeth, 14*s*., with an increase of 3*s*. 4*d*. for each additional tooth up to a maximum of £1 16*s*. 8*d*.

8. *Crowns*.—£1 12*s*. 6*d*., including any necessary root treatment.

Except under special conditions, which must be fully explained in the estimate, crowning should be recommended, if at all, only in respect of the six front teeth (upper or lower), and should be confined to not more than one tooth in each jaw.

From my remarks you will have gathered that dental benefit under the N.H.I. Act is essentially a *health* service. The insured patient is not at liberty to obtain any particular kind or limited amount of treatment he may desire, and the acceptance by him of a dental letter from his Approved Society entails proceeding with *all* the

treatment necessary to secure reasonable dental efficiency as estimated by the dentist.

It would be as well, however, to remember that the insured patient is not a *Panel* patient. He is not already a registered prospective patient as is the Panel patient with the Panel doctor. He comes to you of his own free will to receive something to which he is fully entitled and towards which he has already paid by his contributions. He is, therefore, justified in expecting to receive the same consideration and treatment as a private patient, even though the charges are not the same.

In conclusion, I should like to refer to the progress which has been made in the provision of dental benefits. The establishment of the Dental Benefit Council in 1930 was a remarkable achievement, for, although dental benefit was being given by Approved Societies as far back as 1921, there were no definite regulations laid down concerning the scope of the benefit until 1930, when, by purely voluntary efforts, representatives of the Approved Societies and the dental profession worked out a scheme which had the effect of purging the service of anything in the nature of quackery and guaranteed the insured persons a standard of treatment which, since 1930, has been effectively administered and reasonably remunerated.

The amount spent on dental treatment under the N.H.I. scheme is about two million pounds per annum, and there can be no doubt that the facilities which the societies have made available to insured persons in the matter of dental treatment have had a far-reaching effect with regard to the public health, and have gone a long way towards carrying out the preamble of the original National Insurance Act of 1911, which states that it is an Act to provide for insurance against loss of health *and for the prevention and cure of sickness*.

Considerable responsibility, therefore, devolves upon the dental surgeon in making the scheme a success.

Correspondence

Hexamine in Cholecystitis

To the Editor of the GAZETTE

SIR,—I was interested to read that Dr. Hurst is in the habit of giving his patients with cholecystitis 300 grains of hexamine daily in 100-grain doses. I have often wondered whether there was really any limit to the amount of hexamine which the body would tolerate, provided that the urine was alkaline.

My own practice has usually been to give a large dose at night, but not to give any during the day when the gall-bladder is active. I have not yet discovered any limit to the dose which may safely be used, and I thought it might interest your readers to know that I have recently given a patient 200 grains each night for several nights without any ill-effects. This dose was reached after several weeks by gradually increasing the amount, starting with 50 grains. The only reason why it was not further increased was the apparent recovery of the patient and the complete disappearance of the tenderness which had been such a striking sign on his admission to hospital.

If these large doses are to be employed, it is most important that *every specimen* of urine should be tested with litmus and the hexamine withheld if the reaction be anything but frankly alkaline. In hospital the nurses should be instructed to this effect. In private practice it is quite possible to use this method of treatment if the patient will carry a blue litmus book about with him (or, more often, her) and test every specimen passed. The amount of alkali required to render the urine alkaline varies considerably in different patients, as Dr. Hurst points out, but even when the patient has gone for 24 or 48 hours with an alkaline urine the precaution of testing each specimen passed should not be overlooked. Variations may still occur, and the practice should be maintained until the treatment is finished.

Yours, etc.,

MAURICE E. SHAW.

33, Wimpole Street, W.1.

Sport

Swimming Club

AT the close of last season a meeting of the United Hospitals' Swimming Club was held to discuss the question of a Water-Polo League. It was felt by the majority that, although a knock-out Cup competition provided more excitement, the hospitals at present weak in water polo had less opportunity to improve their standards. The meeting, therefore, unanimously decided to discontinue the Cup competition, and to institute instead the Inter-Hospitals' Water Polo League to be played for the same prize.

Guy's v. London Hospital
(League)

THIS game, played on Friday, May 17th, was the first League match played by the Hospital, and resulted in a very decisive win. London played a very sporting and hard game, but Guy's were immeasurably superior. Surprisingly enough considering the very high score, the Hospital played an excellent game and every goal was cleverly made.

Result.—Won, 11—1.

Team.—J. Crane; C. Styer, C. Halamandres; J. Smit; T. Weston, A. H. McCall, J. Bulstrode.

Guy's v. Brighton College

ON Saturday, 18th May, Guy's made their annual visit to the College. In the whole match, in which swimming and water polo were combined, the Hospital were victorious. After winning the hundred and taking second and third places in the fifty, points were even. A.Crook and T. Weston were first and third respectively in the diving competition, but a tired team lost the team race by a narrow margin and the Hospital were two points down.

In the polo, Styer within 30 seconds of the start, scored a brilliant goal. Although the College fought back gamely they were beaten by the combined weight and experience of our men, and lost by six goals to three.

Result.—Swimming: Brighton, 18; Guy's, 16. Polo: Brighton, 3; Guy's, 6.

Teams.—Polo: J. Crane; C. Halamandres, C. Styer; J. Smit; A. McCall, T. Weston, L. Bulstrode. Swimming: J. Drew, A. Crook, A. McCall, T. Weston, C. Halamandres, T. Power.

Guy's v. University College Hospital
(League)

GUY'S were taken off their guard in the first half of this game, played on Thursday, May 23rd, and at half-time they were losing by three goals to one. After the rest, however, they warmed to their work and scored three goals in quick succession. At this point the outlook became depressed once more, as T. Weston was ordered out of the water for a technical foul. However, the team persevered and actually scored the next goal. Then with a full team once more the Hospital went on to win the second of their League matches by three clear goals.

Result.—Won, 6—3.

Team.—J. Crane; C. Styer, C. Halamandres; J. Smit; A. McCall, T. Weston.

Guy's v. St. Mary's Hospital
(League)

GUY'S did not shine in this game, played on Wednesday, May 29th. Although they had the advantage of ends, they were unable to use the advantage. T. Weston and Styer played good games, but the rest of the team showed a distressing tendency to get in one another's way. Weston scored early for the Hospital, but St. Mary's retaliated by putting four shots past Crane in quick succession.

Guy's fought back to make the score level, but for some reason best known to themselves lacked the ability either to score in their opponents' deep end or to prevent them scoring in our own shallow end. The game ended with the score six goals to four in St. Mary's favour.

Result.—Lost, 4—6.

Team.—J. Crane; C. Styer, C. Halamandres; J. Smit; J. Bulstrode, A. M. McCall, T. Weston.

Old Boys of Charterhouse and Epsom College may be interested in the following dates:—

Guy's *v.* Charterhouse, Saturday, June 15th (*a*).
Guy's *v.* Epsom Coll., Wednesday, June 19th (*a*).

United Hospitals Swimming Gala

THE above will be held on Saturday, June 29th, in Marshall Street Baths, at 8.30 p.m. The Baths are one minute's walk from Oxford Circus.

A Water Polo match will be played between the United Hospitals' Swimming Club and a visiting team from Trinity College, Dublin. There will also be an exhibition of fancy diving.

The Inter-Hospitals' Swimming and Diving Championships and also the Nurses' Inter-Hospitals' Championship Cup, will be decided during the evening.

Tickets may be obtained on application to the Swimming Secretary, J. Smit, at the Hospital.

The Nurses' Gala

THE Nurses' League very kindly extended an invitation to the Clubs' Union to participate in their Gala held on Monday, May 20th, at Lavington Street Baths. In fact, the only blot on the whole evening was made by the Club, who in playing Bart.'s lost by eight goals to two. The spectators, however, disgusted by the defeat, were pleased by watching R. Sutton, of England and Bart.'s.

A medley team race was organised by the Clubs' Union between the Medical School,

Dental School and the Wards. The two Schools dead-heated for first place, with the Wards somewhere back on the second length.

One extra-bright spot in the evening was the winning of the Inter-Hospital Nurses' Cup by Guy's. This Cup was presented by Mr. Ogilvie, and at the end of the evening Mrs. Ogilvie graciously presented the prizes.

Our congratulations to Nurse Wood for a very efficiently organised and entertaining gala.

The Lawn Tennis Club

IT is difficult to estimate the number of tennis-playing members of the Clubs' Union, but there does seem to be an increase in the numbers using the courts at Honor Oak Park. About twenty players took part in the "trials," most of whom were new arrivals at the Hospital. It is gratifying to note that four of these have already played in matches for the Hospital and that others of them have only had their opportunity postponed through the scratching of some fixtures due to bad weather.

However, it is not enough that the membership should be large—it must also be enthusiastic. The presence of both these new and old members is always urgently desired at the Annual General Meeting, at which the attendance was disappointing this year. Their comments and criticisms on the running of the club and the facilities for the playing and enjoying of lawn tennis would be more appreciated if made at the meeting or direct to members of the committee rather than through the devious and sometimes unpleasant channels as at present.

At the Annual General Meeting held on May 10th, C. A. Boucher was elected Captain and E. P. O. Watson Hon. Secretary for the year.

The playing strength of the club has suffered by the injury to J. E. Giesen and the departure of J. A. Sidebottom, but, nevertheless, we hope to regain the Inter-Hospitals' Cup from St. Thomas's, whom we expect to meet in the second round.

The drought of last year has made it difficult to get the grass courts in condition for this season, but every effort has been made to have them satisfactory. The lack of rain has also damaged the hard courts, and it will be necessary to have them relaid during the year.

It is proposed to plant a line of trees extending between the "rugger" stand and the entrance gate. It is hoped that this will, besides improving the ground generally, serve as background to the courts and prove some protection against the wind. A canvas screen is to be put up, if practicable, until the trees are big enough to make it unnecessary.

Inter-Hospitals' Athletic Sports

ON Wednesday, May 22nd, at the Duke of York's Headquarters, Chelsea, Guy's regained the Inter-Hospital Athletic Shield, last won in 1929.

After that year, when such men as Hertzog, Harrison and Druce retired from athletics, the team was reduced to a mere handful, which for the next three years occupied one of the humble positions in the Inter-Hospitals' contests. Since then, however, the team has grown in numbers and ability, and this year at last was again victorious, running out winners with a clear ten points' lead over Bart.'s, with St. Thomas's third and St. Mary's fourth.

The merit of the Hospital's performance lay in team work, only three events being won by Guy's but points were awarded for the first four places and Guy's secured eight second, five third, and three fourth places and 17 members of a team of 21 gained places.

Team.—100 yards—P. S. Clarke, L. G. Morey. 220 yards—L. G. Morey, D. Du Toit. 440 yards—D. Du Toit, D. M. Douglas. Half mile—D. M. Douglas, A. E. Etheridge. One mile—A. E. Etheridge, D. G. Lyon. Three miles—A. E. Etheridge, C. Solomon. 120 yards Hurdles—P. Griffin, R. O. Yerbury. Long Jump—P. Griffin, E. I. Davis. High Jump—R. O. Yerbury, L. C. Bellsham-Revell. Relay Team—Douglas, Du Toit, Morey, Griffin. Javelin—P. H. Denton, A. G. T. Brown. Weight—E. R. J. Walmsley, A. G. T. Brown. Tug-of-War Team—Clarke, Woolstone, Walmsley, Rake, Ziervogel, Crabb, Van Steytler, Jenkins.

Cricket

Guy's v. The Private Banks

ON Saturday, May 4th, Guy's played their first match of the season against the Private Banks, at Catford. The Banks batted first and made 187 for the loss of five wickets before declaring. The Hospital made a great fight, but were finally all out for 145, and thus the match ended in a win for the Banks by 42 runs.

Scores—Private Banks, 187 for 5 (declared). (W. Wylde, 3 for 23.)

Guy's

G. M. A. Brown, c. Robertson, b. Blessley	15
H. D. Foster, st. Gunn, b. Ward	33
H. Jones-Lewis, b. Smith	4
A. D. Willis, c. Tilturn, b. Ward	15
P. H. Birks, c. Adams, b. Ward	4
C. G. Wright, hit wicket, b. Black	4
T. J. M. Lowry, l.b.w., b. Black	23

W. E. Greenwood, b. Blessley	0
R. L. Skea, run out	20
A. L. Young, b. Ward	2
W. Wylde, not out	0
Extras	25
Total	145

Guy's v. The Wanderers

GUY'S entertained The Wanderers at Honor Oak Park on Wednesday, May 8th, and the match ended in a win for the Hospital by 23 runs. Guy's batted first and made 176, and this was partly due to some good batting by A. D. Willis (39) and P. H. Birks (39), and also to steady all-round batting. R. L. Skea bowled excellently for the Hospital, taking 6 for 53.

Scores—The Wanderers, 153 (R. L. Skea, 6 for 53).

Guy's

T. D. H. Ridsdale, c. Wheelhouse, b. McLagan	10
A. D. Willis, b. McLagan	39
L. G. Morey, b. Wheelhouse	8
C. G. Wright, b. Wheelhouse	9
H. Jones-Lewis, b. McIntyre	18
R. L. Skea, b. McLagan	0
T. J. M. Lowry, b. McIntyre	18
G. O'Gorman, run out	14
P. H. Birks, c. Austin, b. Wheelhouse	39
H. A. Thomas, b. Wheelhouse	5
W. Wylde, not out	3
Extras	13
Total	176

Guy's v. The Sun of Canada Club

GUY'S visited Greenford on Saturday, May 11th, and batted first against the Sun of Canada Club. Having made 141 for 7, Wright declared his innings closed. Against the bowling of Skea the Sun of Canada fared badly, and were dismissed for 86, leaving the Hospital the victors by 55 runs.

Scores—The Sun of Canada Club, 86 (R. L. Skea, 6 for 42).

Guy's

T. D. H. Ridsdale, c. Bird, b. McMorran	8
G. M. A. Brown, b. Bircham	29
H. B. Foster, b. McMorran	4
A. D. Willis, c. Spears, b. Draper	8
P. H. Birks, c. Woollard, b. Woodhouse	35
C. G. Wright, c. and b. Bircham	5
T. J. M. Lowry, c. Scading, b. McMorran	20
S. M. Whitteridge, not out	21
R. L. Skea, not out	5
Extras	6
Total for 7 wickets declared	141

A. L. Lowry and W. Wylde did not bat.

Guy's v. University College Hospital

ON Friday, May 24th, Guy's played University College Hospital in the Second Round of the Inter-Hospitals' Cup, both sides having had a bye in the first. Guy's batted first and, thanks to a fine innings by T. D. H. Ridsdale of 52 not out, backed up by 28 from L. G. Morey, the Hospital managed to make 149. University College Hospital started well, and were 101 for 4, but a collapse followed and they were all out for 134, so Guy's passed into the Semi-Final by 15 runs. The low scoring was partly due to a strong wind, blowing across the ground, which was made use of by the bowlers.

Scores—University College Hospital, 134 (R. L. Skea, 3 for 50; A. L. Young, 4 for 37; L. G. Morey, 2 for 33).

Guy's

G. M. A. Brown, b. Rotiero	0
T. D. H. Ridsdale, not out	52
A. D. Willis, run out	10
L. G. Morey, b. Dawson	28
G. O'Gorman, run out	19
P. H. Birks, b. Harris	0
C. G. Wright, c. Harris, b. Wigfield	0
H. D. Foster, l.b.w., b. Wigfield	9
T. J. M. Lowry, run out	0
R. L. Skea, c. Harris, b. Wigfield	14
A. L. Young, c. Wigfield, b. Dawson	7
Extras	10
Total	149

Guy's v. St. Ann's

ON Wednesday, May 29th, Guy's visited Virginia Water to play St. Ann's. This is always a very enjoyable fixture, and this year was no exception as the game itself was an exciting one. St. Ann's, after being put in by Guy's, made 133. The Hospital had to fight the clock and, thanks to a steady innings of 45 by T. D. H. Ridsdale and some hard hitting by Skea, the runs were obtained in the last over but one. R. L. Skea was undefeated at the close with 35 to his credit.

Scores—St. Ann's, 133 (R. L. Skea, 3 for 32; G. O'Gorman, 5 for 32).

Guy's

C. G. Wright, run out	6
T. D. H. Ridsdale, c. Harding, b. Hawkes	45
G. M. A. Brown, b. Blaber	9
L. G. Morey, c. Dunkley, b. Hawkes	27
A. D. Willis, c. Blaber, b. Devine	5
G. O'Gorman, b. Hawkes	1
T. J. M. Lowry, b. Willis	11
R. L. Skea, not out	35
P. H. Birks, not out	5
Extras	2
Total for 7 wickets	145

The Junior Cup Match

GUY'S 2nd XI played University College Hospital 2nd XI in the Second Round of the Inter-Hospitals' Cup, and this resulted in a win for Guy's by 10 wickets. University College Hospital were all out for 72, and this was due to some good bowling by W. Wylde (8 for 28). T. D. Ridsdale and D. A. Priestley opened the innings and knocked the runs off without being separated. Priestley got 58 not out and Ridsdale 14 not out.

Hospital Information, etc.

Notices

Guy's Hospital Dental School

HALF-TIME ASSISTANT TO THE DIRECTOR OF THE DEPARTMENT OF CONSERVATIVE DENTAL SURGERY

Applications are invited for the post of Half-Time Assistant to the Director of the Department of Conservative Dental Surgery. Duties to commence on October 1st. Salary to be at the rate of £300 per annum.

Applications should be lodged with the Dean, in the Medical School office, on or before June 15th, 1935.

Guy's Hospital Musical and Operatic Society

An Orchestral Concert will be held in the Physiology Theatre at 8.15 p.m. on Thursday, June 20th. Tickets at 4/-, 2/6 and 1/- may be obtained from the Secretary, W. HOWARD CLARKE or from the WILLS LIBRARY.

Pass List

UNIVERSITY OF CAMBRIDGE.
M.B., B.Ch.
G. E. Walker.

SOCIETY OF APOTHECARIES OF LONDON.
FINAL EXAMINATION.
May, 1935.
Surgery.
H. N. Levitt.

Papers by Guy's Men

H. St. John Rumsey. Re-education of the stammerer. *Medical Press*, 1935, cxc, 438.

A. G. Signy, W. W. Payne and Another. Ætiology of acute rheumatism. *Lancet*, 1935, i, 1090.

Robert Bradlaw. A case of diffuse osteitis of maxilla and mandible for diagnosis. *Brit. Dent. Jour.*, 1935, lviii, 421.

A. E. Rowlett. Prophylactic measures in orthodontics. *Dental Record*, 1935, lv, 269.

Clifford Allen. Introjection in schizophrenia. *Psychoanalytic Review*, 1935.

A. Gordon Signy and Others. Ætiology of acute rheumatism; Experimental evidence of a virus as a causal agent. *Lancet*, 1935, i, 1145.

J. W. Shackle. Investigations in rheumatic cases. *Jour. Clin. Res.*, 1935, xxi, 41.

A. H. Douthwaite. Spa treatment of crippling diseases in children and adults. *Med. Press*, 1935, cxc, 499.

C. Worster-Drought. (1) Juvenile tabes dorsalis; (2) Hepatomegaly with persistent ketonuria. *Proc. Roy. Soc. Med.*, 1935, xxviii, 829, Clin. Rep. and Demonstrations, Sect. Study Dis. Children.

J. Vernon Braithwaite. Specimens from a case of congenital hyperplasia of the suprarenal cortex. *Ibid.*, 839.

L. Forman. (1) ? Gumma of scrotum; (2) Gumma of neck and scalp. *Ibid.*, 809, Sect. Dermat.

John A. Ryle. Abdominal and circulatory phenomena of allergy. *Lancet*, 1935, i, 1257.

C. P. Symonds. Nervous breakdown. *Clin. Jour.*, 1935, lxiv, 221.

H. L. Attwater. Hydronephrosis and pyonephrosis. *Ibid.*, 249.

C. S. Lane-Roberts. The use and abuse of forceps in midwifery. *Practitioner*, 1935, cxxxiv, 731.

G. F. Gibberd. The treatment of puerperal sepsis. *Ibid.*, 738.

Change of Address

E. D. Scott, "Jordans," Palmeira Avenue, Hove 3, Sussex. *Hove* 5454.

Deaths

FLOYD.—On May 22nd, 1935, at Bournemouth, Stephen George Floyd, M.D., in his 68th year.

FROST.—On May 12th, 1935, accidentally drowned while yachting off Bradwell-on-Sea, Essex, William Frederick Hubert Frost, L.D.S., of 13, Head Street, Colchester, eldest son of Abraham William Frost, L.D.S., of Tilney House, North Hill, Colchester; age 27 years.

EDS. { P. W. C.
M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX *22nd June 1935* *Number 1224*

PASSIM

ENTROPY, we are told, is always increasing, and the world's energy is running down. If we are not careful the sun itself will have ceased to shine in another five million years. Truly our alarm for posterity should be great. It behoves us, then, to maintain our feverish struggle for the conservation of energy in useful form, and it is but natural that in a scientific age, when remedies insist on their diseases and inventions on their applications, much time of scientists should be spent in conserving energy by the elimination of waste. The most improbable achievements have in this way been fulfilled. Thus we know that farmers paint their fences with the melanin obtained from the sarcomata of their white horses, and that even the hearts of the defunct are used as antigens in complement fixation tests. Of late yet another step in the elimination of waste has been achieved. "The female woman," cried Artemus Ward, "is one of the greatest institooshuns that this land can boast," and it is the female woman who is enabling this further milestone in the march of science to be reached.

It is rumoured that a reputable firm of druggists have approached the Hospital authorities with an offer that they should give us a sum of money that should drive the wolf at least as far as the Borough High Street, in return for supplies of the urine of pregnant women. It seems likely that such an attractive proposition will be accepted. The material will be collected, delivered in plain vans, and the cash will come rolling in. Both the Hospital and the druggists will be happy. But the question arises, what of the patients? Might we not lay ourselves open to the charge of exploiting their priceless properties? And if the patients attending the Welfare Centre were to hear of the arrangement, might they not go on strike? In which case they might band together in unanimous refusal, and the term "Mothers' Union" assume a trade significance.

To obviate this difficulty it has been suggested that some small payment should be made to those who give their services. Whether or not this should be based on a flat rate has not yet been determined; it seems likely that there may be graded payments according to the value of the services rendered, as estimated by some arbitrating power such as the Sister in charge.

This brilliant advance in the utilisation of waste products deserves our highest admiration. Not only do we and the druggists both make money, but the patient may receive a penny for the same function for which she may formerly have had to pay it. It seems as though the whole concept of economics may have to be changed. The scheme has the further advantages that it will stimulate trade at the "Miller" and may increase the falling birth-rate. For it is only the carrying mother who will be eligible. To those that have it shall be given, and to those that have not it shall be taken away, even that which they have.

▭

WE should like to congratulate Mr. H. L. Eason, Superintendent, and Consulting Ophthalmic Surgeon to the Hospital, on his appointment as Vice-Chancellor of the University of London for the year 1935-36. Mr. Eason has been a member of the Senate of London University for 24 years, and has represented the Senate on the Court of the University since 1931. The appointment is an honorary one, and will, happily, entail no severance of Mr. Eason's connection with the Hospital.

WHILE Nuffield House rapidly nears completion, preparations are under way in other parts of the Hospital for extensions and fresh buildings. It is hoped this year to make a start on the new Pathology Block, which is to be built behind the Medical School, between it and the Borough High Street. When completed, the new block, besides housing the Pathological Department, will relieve congestion in the Medical School by providing space for the teaching of physics, biology and pharmacology.

For Honor Oak Park the plans have been passed, and a start will shortly be made, on an extension of the pavilion, which is being built to accommodate the users of the new hockey and rugby field, which was acquired last year, adjoining the present ground. The extension is to be made on to the front of the present pavilion, and will increase the number and size of changing and dressing rooms. In its equipment and construction, at the cost of £3,000, the Clubs' Union Council have made every effort to cater for all possible demands of the members of the Hospital. The pavilion will be ready by the start of the rugger season, and it is hoped to hold a fixture of particular importance on the opening day.

WE should like to welcome Dr. Behrman, B.Sc., M.R.C.P., who comes to fill the post of registrar to Dr. Symonds rendered vacant by the departure of Dr. Denny-Brown, who has taken an appointment in the Department for Nervous Diseases at St. Bartholomew's Hospital. It is thus all the more pleasing that Dr. Behrman himself should be a Bart.'s man, and we welcome it as yet another instance of the closer relationship which is developing between ourselves and the other teaching hospitals. Dr. Behrman's previous appointments include House-Physician and Registrar at the Hospital for Epilepsy and Paralysis, Maida Vale, and Assistant Registrar at the National Hospital for Nervous Diseases, Queen's Square.

The Treatment of Stammering

A Clinical Lecture given at Guy's Hospital on 20th May, 1935, by H. St. John Rumsey, Esq., M.A.(Cantab.), Instructor for Speech Defects, Guy's Hospital

GENTLEMEN,—" Is anxiety the primary cause of stammering ? " is a question that is constantly asked. That anxiety is closely associated with stammering is proved by the fact that any stammerer can speak without the slightest hesitation or difficulty when alone in a room, but the trouble is likely to recur with the entry of another person.

This would seem to indicate that anxiety is the primary cause, but, on the other hand, a very large proportion of stammerers show no signs of anxiety except when speaking, so it remains an open question whether anxiety is the cause or the effect of stammering. If the latter is the case, re-education of speech is the logical solution of the trouble, because it is unreasonable to expect the anxiety to decrease as long as the anticipation of failure is justified by frequent breakdown due to faulty technique.

Stammering is caused by failure to co-ordinate respiration and the movements of the intralaryngeal muscles, and this is further shown by the well-known fact that nearly all stammerers, if musical, can sing without any trace of stammering. Thus it becomes clear that when the mind is concentrated on phonation, or the sound produced by the breath passing between the vocal cords, the stammer disappears and is absent as long as the attention is so concentrated. That this explanation is the correct one is further indicated by the fact that most stammerers can whisper fluently ; that is, when there is no intention to phonate, speech is fluent.

Normal speech consists of phonation and checking that phonation partially or completely. In the open vowels phonation is unchecked, that is to say, the vocal tone has free exit through the mouth ; in the closed vowels phonation is checked in varying degrees according to the vowels that are being formed. In the consonants phonation is still further checked in the continuants (such as m, n, v and l), and is cut off altogether for the explosives (such as d and b).

Two words will illustrate these facts. In the word " obey " phonation is comparatively free during the formation of " o," but to articulate " b," phonation must momentarily cease, but be resumed to complete " b " and to produce " a " (ey). In the word " dog," complete cessation of phonation is required to articulate " d," but the speaker must phonate again to complete " d " and to form the vowel " o " (short). For the articulation of " g," phonation must again cease for a moment and then re-start for the completion of "g."

When singing, the stammerer automatically and subconsciously concentrates his attention on the vowels, in which phonation is unchecked or comparatively unchecked; if he did not concentrate on vowels, he would not be able to sing musical notes of definite pitch and having definite time values; in other words, he thinks in terms of vowels. When the stammerer speaks, the position is reversed, for he now concentrates on the consonants—he now thinks in terms of consonants, because he thinks that his difficulties are in the consonants. Actually this is not so. Take the word " day." A typical stammerer will say " d-d-d-d-d-day "; he will tell you that he cannot articulate " d," actually the reverse is true. He has articulated " d " six times, but he has failed to phonate the vowel sound " ay." The stammerer's difficulties with consonants are imaginary; he " sticks " on the consonants or repeats them because the vowels are not ready—they are not mentally pictured. The real trouble is that the intra-laryngeal muscles fail to follow on after the muscles of the lips and tongue as used for the articulation of the consonants.

Stammering is failure to phonate vowels. Listening to the typical stammerer will prove this; suddenly the sentence comes to an end, there is a silence, or the sounds of a repeated consonant. In both cases the cause is the same, the intra-laryngeal muscles are out of control—phonation has ceased.

In this connection it is interesting to note that nearly all stammerers can imitate other voices or dialects. Since peculiarities in voices and dialects are heard in the vowels, it is necessary to concentrate on vowels in order to imitate. Once again it is clear that the stammerer can speak fluently as long as he concentrates on phonation, that is, on vowels. So the correction of a stammer consists in " thinking in vowels " instead of " thinking in consonants." This sounds easier than it is, because the stammerer has formed the habit for many years of an over-consonanted speech, which gives the quick, jerky effect which we associate with the speech of a typical stammerer. Having developed a kinematic memory for jerky speech, it is very difficult to develop a slow and smooth speech. This is the problem which must be faced if the speech is to be corrected, and the stammerer must realise that every day of firm-toned speech is building up a kinematic memory for smooth speech in order gradually to break down the firmly established kinematic memory for jerky speech.

Another factor which may hinder progress is the stammerer's reluctance to change to a firm-toned, deliberate speech, to take the place of his old style; he is very naturally self-conscious about his speech, and feels that any change will draw more attention to himself. He must realise that the choice lies between speaking slowly, firmly and fluently, or speaking quickly and keeping his stammer.

Perfect speech depends upon the correct balance between the phonation of the vowels and the articulation of the consonants. The typical over-stressed consonants of the stammerer upset this balance and the vowels are clipped and do not receive their due attention. As was explained above, singing forces the attention of the stammerer on to his vowels, and so long as his attention is thus concentrated he will not stammer.

Most speakers speak too fast for their words to be clearly heard and for the sequence of their ideas to be followed or remembered. Really good speech must be firm-toned and slow, so the stammerer is really being asked to master the type of speech that is of advantage to any professional man. Furthermore, it is very difficult to imagine anything more calculated to increase the confidence of a stammerer than to hear the sound of his own voice speaking firmly, fluently, and with a confident-sounding tone.

In cases of stammerers who are neurotic and where anxiety is likely to be the cause of the trouble it is wise to consult a neurologist, but it is necessary to correct the speech at the same time, because as long as the quick, jerky speech remains, the door is left open for the return of the stammer.

The stammerer having concentrated on consonants may be expected to have a perception of vowel sounds below the average, but since correction of the stammering habit is being sought through careful attention to the vowel sounds, it is necessary for the stammerer to realise that there are 24 such sounds: 11 simple, 10 dipthongs and 3 triphthongs—they are heard in the following words: seat, pig, leg, can, boot, foot, hop, ark, cord, hurt, cut, tale, hair, home, tune, night, loud, hoist, hear, moor, beard, cure, tower and fire.

The stammerer should read short passages, taking care to give all the vowels their clear and distinctive pronunciations; as long as he does this he will find that he not only does not stammer, but that he cannot stammer. A vowel must be " clipped," omitted or distorted before a stammer can occur.

The above remarks apply to 99 per cent. of stammerers, but there is an unusual type that stammers on the phonation of the vowels themselves. Such stammerers are very difficult to correct, and a cure must depend upon minute and careful study of rhythm (the time-values of all the vowels). Vowel-stammerers have been cured, but it takes a very long time and almost infinite

patience on the part of the instructor as well as on the part of the patient.

A bad system of breathing is often blamed as being the cause of stammering. There is no doubt that comparatively few people know how to breathe deeply, and that all would benefit in health by study of deep breathing, but the failure of the breath to last to the end of the sentence or phrase is due, not to insufficient breath having been taken, but to insufficient vocal cord resistance.

If the vocal cords are not approximated correctly, air will escape between the cords without producing a corresponding amount of vocal tone. The art of voice production consists in producing the maximum amount of vocal tone with the minimum amount of breath. To produce a firm tone it is necessary to approximate the vocal cords, and if this is done there will be no waste of breath. So it comes about that the remedy for apparent shortness of breath and for the stammer itself is the same—to speak with a firm and full tone of voice at all times.

Speaking slowly, firmly and smoothly all the time will break the habit of stammering and will build up the habit of fluent, audible and intelligible speech.

The Ætiology of Rheumatism

A Paper read before the Physical Society in March, 1935, by E. Sayle, Esq.

MR. CHAIRMAN and GENTLEMEN,—There was a time when the joints and fibrous tissues were thought to be the sites of attack of the agent of rheumatism. Then the conception of the disease widened to include the heart, and, later still, the brain. Gradually more extensive pathological investigation, most recently that of Van Glahn and Pappenheimer, has shown that rheumatic lesions are not the localised appearances they were once thought to be, but rather widespread in their distribution, and probably affecting the whole capillary system throughout the body. The problem of rheumatism thus has wider aspects than when Poynton and Paine approached the subject at the end of the last century. We can no longer look for an organism with an elective affinity for one or two structures. Rather have we to find an explanation of a generalised disease.

In spite of much investigation, there is no sequence of facts which leads logically to the ætiological agent. That there are grounds for assuming this to be common to both acute and chronic rheumatism must on the whole be accepted before the question of causation can be fully considered. The acute disease has many features which justify its recognition as a specific disease. Many cases of chronic arthritis in which as yet no indisputable causal agent has been isolated have previous histories of rheumatic manifestations. The assumption of a common origin is thus reasonable. It may be that a single agent displays different activities under diverse conditions, very much in the same way that the tubercle bacillus stimulates at one time an acute inflammatory response on the part of the organism, while at another a chronic proliferative response. If a single factor provokes rheumatism, we are faced with the isolation of a protozoon, bacterium, virus, toxin or organism of a type at present unknown to us. If a single agent is inadequate, then rheumatism may be the outcome of a set of circumstances, the combination or sequence of which is fairly constant. In this case the organisms, if there are two, need not act simultaneously, nor is there any absolute necessity for unusual specific environmental factors independent of the presence of the agents concerned. It is more than probable that both coryza and influenza are the outcome of double infection.

Up to the moment no single organism has been isolated, but it will be well to consider the views which have been given in the past, and to which some still adhere. These may be divided into two groups, which in themselves outline the stages through which investigation has passed. The first involves the direct causal relationship of the streptococci to rheumatism, and their isolation from the lesions or blood stream. The original protagonists of this were Poynton and Paine. The second arose as the result of the repeated failure of different workers to isolate a specific streptococcus. This was the allergic hypothesis, a convenient explanation for the confusion existent at the time as it covered all the views on streptococci which had been promulgated.

The direct relation of these organisms will be dealt with first. In a small percentage of cases non-hæmolytic streptococci were isolated. Then in more recent years some investigators with a very elaborate technique have claimed a majority of positive results, but others have had consistently negative findings. Clearly the more elaborate the technique the greater the opportunity for contamination. To confront the positive results is the fact that many trustworthy

workers have failed to isolate the organism concerned, not only in their own laboratories, but also in those of the claimants, and then when using the latter's tecnhiques. Coburn, who made investigations on no fewer than 21 different media, had consistently negative results. This, then, is fairly strong evidence against the non-hæmolytic streptococcus, or even the hæmolytic streptococci being directly responsible for rheumatism. Further, it has been shown within the last few years that with adequate care non-hæmolytic streptococci may be recovered from the blood of apparently healthy individuals. Streptococci are common commensals of the small intestine from which normally absorption readily takes place. There seems to be no adequate reason why streptococci should not be absorbed from the intestinal mucosa, and circulating, leave the individual's well-being unimpaired. Again, it is by no means uncommon in agonal and post-mortem states to find streptococci within the capillaries of various organs independently of the cause of death.

The majority of workers who had succeeded in isolating an organism from rheumatic cases, had found always a variety of the streptococcus group. In this broad respect rheumatism was specific. In order to find a common explanation for these inconsistent results, the suggestion was made that allergy played a part in determining rheumatic manifestations. There was an analogy between serum sickness and acute rheumatism. For allergy to play a part the patient had somehow to be sensitised to something. Accordingly the source of sensitisation was cited as a focus, not necessarily demonstrable, of chronic streptococcal infection, although usually the mouth or nasopharynx was suspected.

Now in all streptococcal infections we have no better demonstrable focus of infection than the vegetations on the heart-values in sub-acute bacterial endocarditis. From these the bacteria and their products must find ready access to the blood-stream. There are further periods during which the blood is bacteria-free as the result of the deposition of a fibrinous material on the surface of the vegetations; 50 per cent. of these cases are said to be superimposed on values previously damaged by rheumatic disease. In spite of this, no reference was found of subacute bacterial endocarditis precipitating relapses of rheumatism. Evidence has now accumulated to show that any previous valvular deformity, not always rheumatic, predisposes to subacute endocarditis. A congenital bicuspid condition of the aortic valve is sufficient. Either then the valvular focus does not sensitise a patient in the disease, and no rheumatism develops, or on the other hand sensitisation to the streptococci or their products has nothing to do with rheumatism.

If the claim of the non-hæmolytic streptococci is considered for a moment, further grounds can be shown for doubting their specific relation to the hypersensitive explanation of rheumatism. Hypersensitivity may not infrequently be demonstrated by an erythematous condition of the skin following injection of a specific antigen to which the patient is believed to be sensitive. Toxic filtrates of cultures of the non-hæmolytic streptococcus have been used, but, unfortunately for the theory, a considerable number of non-rheumatic controls also give positive skin reactions. Birk-Lang, who at one time described a non-methæmoglobin-forming streptococcus found, that 70 per cent. of his cases with histories of rheumatism gave positive results, while 20 per cent. of normal controls showed identical reactions with identical doses. The experience of many other investigators is of a similar nature, and we have thus to discountenance, at least in part, the significance of the non-hæmolytic streptococci. In view of the ubiquitous nature of these organisms, the above findings can scarcely be surprising.

If, on the other hand, it is the hæmolytic variety of the streptococcus which is responsible, why is it that hypersensitivity does not follow such conditions as mastoiditis, erysipelas, appendicitis, streptococcal pneumonia, and suppurative periostitis, in which this organism is responsible? These are not necessarily acute infections alone. They may become chronic. No authenticated case has yet been recorded. And if hypersensitivity is the key to the disease, why do not the symptoms of rheumatism occur in other diseases where this state is said to play a part? The staphylococcus aureus produces a hæmolytic toxin. Why should not hypersensitivity to this organism or its toxin produce rheumatism? Why is not the secondary syphilitic "rheumatic"? If the manifestations of rheumatism accompanied all hypersensitive states, there would be good grounds for doubting the specificity of rheumatism. Yet this is not doubted.

One further aspect of the allergic hypothesis must be considered before we pass to what seem to be a few fairly well-established facts about rheumatism. The latter has long been known to be preceded by an upper respiratory infection occurring some ten to twenty days prior to the onset of rheumatic manifestations. In artificially created states of sensitisation to antigens, the degree of hypersensitiveness can be shown to increase from the tenth to the twenty-first day. This perhaps is very suggestive of a common factor to both allergic states and rheumatism.

But once a host has become sensitised, the result of repeated injections of the sensitising agent is that the host reacts more rapidly, and the period prior to the onset of symptoms shortens correspondingly; nor does the interval lengthen appreciably after intervals of apparent freedom from infection. This, however, is not the case with rheumatism. The period between upper respiratory infection and the initial attack or a recrudescence is of fairly constant duration. There is a slight tendency towards a reduction of the time, but it is never so great as would be expected from the foregoing analogy. To explain this we should have to stipulate that in rheumatism sensitivity could be lost, so that after three months a fresh stimulus from a specific antigen, whatever that might be, required nearly as long again as the original stimulus to produce the rheumatic response. This is contrary to all previous experience of tissue hypersensitivity to bacterial products. The allergic hypothesis would hold if rheumatism were characterised by a single attack, but it is thus difficult to accept for subsequent attacks. There remains the possibility of a type of hypersensitivity at present unknown to us, but if this were so, we should have not only to extend our ideas of allergy, but also to rearrange our fundamental concepts of disease processes.

Doubt has thus been cast on the direct relationship of the streptococci to rheumatic disease, and on the convenient but unsubstantiated allergic theory. It seems that the whole problem requires investigation. Animal experiment has been valueless, and the disease has thus to be studied as it affects man under varying environmental conditions. This study has been made by Coburn in his "Factor of Infection in the Rheumatic State," and a brief *résumé* of this work will now be given.

After the presentation of a picture of the protean nature of rheumatic disease this author proceeds to the question of environment. In temperate zones the appearance of rheumatism is favoured, whereas in tropical regions it is singularly rare. Active rheumatic patients were transferred from New York to Porto Rico, and became entirely free from recurrences. Yet when brought back to New York they frequently suffered from recrudescences. These usually followed an upper respiratory infection. Apparently there was some environmental factor, alien to Porto Rico, which, on the other hand, precipitated relapses in New York.

Studies were accordingly made in four groups of patients in an effort to isolate the factor responsible. Rheumatic patients living in different types of habitation in New York were found in the vast majority of cases to experience recrudescences after upper respiratory infection. Nurses training in a hospital presented their first manifestations of rheumatism after attacks of upper respiratory disease. Their mode of living was comparable to that to which they had been accustomed prior to beginning their careers, and there were no grounds for suspecting that a dietary deficiency was present. A group of rheumatic children were segregated in a convalescent home in the country, where they remained free from relapses until an epidemic of upper respiratory infection occurred, and precipitated a number of relapses. Finally, as mentioned previously, in Porto Rico rheumatic patients escaped recurrences of their disease.

The factor common to the first three groups was infection of the upper respiratory tract. It was absent in the fourth group. These facts merely substantiate what has long been recognised, namely, that nasopharyngitis frequently precedes rheumatism. Cheadle and others knew this many years ago, but for some unknown reason it was forgotten, only to be revived again within recent years.

Clearly the next problem was what causes the upper respiratory infection, and what is its association with rheumatism. It was observed that in rheumatic patients developing relapses following operations on the upper respiratory tract, the hæmolytic streptococcus manifested increased activity. No less than 50,000 bacteriological investigations were made in the nasopharyngeal flora in rheumatic and non-rheumatic patients, not only in New York, but also in Porto Rico. In neither of these places was the hæmolytic streptococcus part of basic nasopharyngeal flora. In the former this organism appeared very frequently displaying a good deal of infective activity in the spring months. In the latter, however, the pharyngeal flora vary but little from season to season, and the hæmolytic streptococcus is only occasionally isolated. On the other hand, in New York and the North Temperate Zone bacteria fluctuate in the pharynx, and this organism is a frequent and transient visitor, when it is commonly accompanied by disease of the upper respiratory tract. In the majority of cases, this is no more than local, but in a minority rheumatism follows. This naturally suggests that invasion of the nasopharynx by the hæmolytic streptococcus is not the end of the problem.

Incidentally the distribution of the disease tallied fairly well with the varying activity of the hæmolytic streptococcus. In the absence of the activity of this organism, children at the segregation home were almost free from recurrences. When, however, as happened on two occasions,

epidemics of hæmolytic streptococcal nasopharyngitis occurred, very many of these convalescents experienced recrudescences. Those children who were transported to Porto Rico had at the time hæmolytic streptococci in their throats, and their rheumatism was active. At San Juan, however, the organism disappeared, and the rheumatism subsided. On returning to New York many of these patients came to possess these organisms in their throats, but not until this occurred did they develop recrudescences.

Concluding, Coburn states " that his observations have led to the belief that the rheumatic process is a human reaction appearing in susceptible individuals, and representing a special type of tissue response to chemical substances arising from disease in the upper respiratory tract; that unrecognised infectious agents may be at work, and that the hæmolytic streptococcus is an important factor of infection in the rheumatic state."

The relationship of the hæmolytic streptococcus with what has been called the " precursor fever " to rheumatic manifestations, and the correlation between the œcology of this organism and the geographical distribution of the disease, and between the seasonal incidence and this bacterium, have thus been established by Coburn and his colleagues. Similar results have been reached by Collis and others in London investigating rheumatic recurrences among convalescents.

An interesting outbreak is recorded by Glover. This occurred in the autumn of 1932 in a large residential school which had been free from acute rheumatism for two years. On September 20th an epidemic of tonsillitis and nasopharyngitis began, which reached its maximum by the middle of October, and subsided by the end of November. The attack rate was 31 per cent. Corresponding with the peak of the outbreak the non-contact carrier rate for the hæmolytic streptococcus was exceedingly high, and this carrier epidemic subsided *pari passu* with that of nasopharyngitis. During this time six cases of rheumatism appeared about the peak of the outbreak, and another case later in December following a sudden rise in the total number of admission of cases of nasopharyngitis admitted to the school sanatorium. The dates on which these cases occurred were consistent with the belief in the existence of a quiescent period prior to the onset of rheumatic manifestations.

Naturally, investigations of the intradermal reactions of rheumatic patients to extracts of hæmolytic streptococci have been made. In Edinburgh, Gibson and Thomson found that with these, rheumatic patients gave a higher percentage, of positive results than controls. With extracts of the non-hæmolytic streptococci there was no significant difference. As scarlatina is associated with a hæmolytic streptococcus, the responses of a group of rheumatics to the Dick test were investigated. This group showed a small preponderance of Dick-negative reactors compared with a group of non-rheumatic controls. These facts indicate that hæmolytic streptococci have been present more frequently in rheumatic patients. From their investigations these workers conclude that there is an association between the hæmolytic streptococcus and rheumatism, but that this is not one of cause and effect, as they have found it possible for rheumatic patients to have positive skin reactions with the intermittent presence of hæmolytic streptococci in their throats, and yet have no relapses. They suggest that acute rheumatism is the outcome of invasion by some infectious agent at present unisolated, whose activities must be prefaced by increased activity on the part of the hæmolytic streptococcus. They add the further possibility that allergic manifestations damage tissues susceptible to rheumatic infection and thus facilitate generalisation of the specific causative agent.

While, therefore, there is strong evidence in favour of the hæmolytic streptococcus playing an important rôle in the production of rheumatism, everything remains to be proved that it is the only ætiological factor.

If infection with the hæmolytic streptococcus occurs without rheumatism following, either those who develop rheumatism are differently constituted from those who do not or, the soil being of a similar nature in the two cases, the streptococcus is different in itself, or in its relations. Maybe it acts in conjunction with a second organism. If, for the sake of discussion, we accept the soil to be different, and also unlikely to alter grossly in the course of time, it is unlikely that the hæmolytic streptococcus, were it the sole agent responsible, should settle in the nasopharynx of rheumatic patients without precipitating a fresh attack of rheumatism. It has, however, been shown that rheumatics may experience infections with the B. streptococcus without suffering recrudescences. Either, then, the soil has nothing to do with rheumatism, or the organism under consideration does not act alone. This does not for a moment deny the increased liability of patients to fresh attacks once they have had rheumatic fever. It means that for some reason at present unknown combined circumstances in the rheumatic are likely to lead to a recrudescence.

The question of a soil has long been disputed, and is still controversial. Coburn seems to think there may be something in it. On the other hand,

Gray Hill finds that no "rheumatic type" of child can be distinguished by bodily configuration, physical type or pigmentation. There are many mitral stenotics whose hair shows not the least evidence of the former presence of the rufous colouring recognised by some as a feature of rheumatic patients. If a family has more than one case of a specific disease among its members, it is just as likely that the environmental factors will be similar, as that there is any similar hereditary predisposition. Surely if there were any striking feature common and peculiar to rheumatics it would have been recognised by now.

While, then, the question of a constitutional soil is still disputable, and does not help much in the solution of the problem of rheumatism, the question of an alteration of the tissue media by environmental factors may be a little more fruitful.

As the result of investigations on guinea-pigs of the effect of chronic scurvy, Rinehart and others found lesions which were in many ways similar to those of rheumatism. Regarding fibrinoid degeneration as the characteristic lesion in rheumatism, they observed that a state of subclinical scurvy combined with infection with the hæmolytic streptococcus, and to a lesser extent subclinical scurvy itself, gave similar, if not identical lesions with those of rheumatism. They therefore suggest that a state of subclinical scurvy may be the soil on which the rheumatic agent flourishes.

There is some support for this as the following data show. In England the greatest shortage of green vegetables, and therefore of Vitamin C, is towards the end of the winter and in the early spring. This is the period of the maximum incidence of rheumatism in this country, and this disease falls most heavily on the poorer classes. They are the very people who would be likely to suffer from an inadequacy of green vegetables. This also happens to be the time when the hæmolytic streptococcus is in the ascendant, and the overlapping of these factors might on this hypothesis be expected to be associated with the incidence of rheumatism.

Where scurvy is unknown, or rather a rarity, as in the Tropics, rheumatism is also very rare. In Holland, where green vegetables are abundant and accessible to all, acute rheumatism is unusual. In Denmark during those months when subclinical scurvy is likely to occur, an alteration in the permeability of the capillary endothelium has been noted, and has been successfully treated by the corresponding vitamin therapy.

The whole of the social and geographical distribution of rheumatism is in accordance with these facts. Further, the occurrence of epistaxis and purpura in the rheumatism, and of hæmorrhages in scurvy, might thus have a common origin. In fact, the whole sequence seems fairly suggestive.

There are, however, a number of doubts to be considered. In some of the guinea-pigs subclinical scurvy itself was said to be enough to produce the similarity to the rheumatic lesions. Yet these lesions were only degenerative. The proliferative type has yet to be reproduced. In Holland, despite the infrequent incidence of acute rheumatism, chronic rheumatism is just as common as in other temperate climes. Doubt, however, is beginning to be cast now on the infrequency of acute rheumatism in that country. Again, Coburn's nurses and children all had their diets especially arranged, yet some of them developed either initial attacks or recrudescences of rheumatism. Finally, no effort is made, even if subclinical scurvy should be the unknown accessory factor, to explain the constant appearance of a lag period prior to the onset of rheumatic symptoms. The association of the hæmolytic streptococcus, however, still remains unchallenged.

The question of hypersensitivity to the products of streptococci has been touched on in part. It has been shown that there are grounds for disputing its significance in rheumatism. Quite a number of antibodies to streptococcal toxins have been recognised, and precipitins and antistreptolysins have been demonstrated as being more frequent in the blood of rheumatics than in non-rheumatic controls. This, however, only strengthens the relationship of the hæmolytic streptococcus to rheumatism. It does not settle for a moment the problem of cause and effect.

None of these toxins known to be antigenic have yet succeeded in reproducing the disease experimentally. It is probable, of course, that this may be naturally impossible among animals. There are three possibilities if a toxin is in any way connected with rheumatism. The first is that a toxin of smaller proportion than the proteinous antigens known, perhaps of the nature of a hapten, and thus non-proteinous, is elaborated and, circulating, enters into combination with certain of the tissue proteins. The second is that the toxin is one of large proportions which has difficulty in reaching the tissues rapidly, and the third is that the toxin is of a type at present completely unknown. But for none of these hypotheses is there any staunch support, and if there is a toxin at work, we have, as has been shown, to consider the possibility of hypersensitivity. This, further, has been demonstrated to have a questionable relationship, as the constant occurrence of a latent period of approximately the same duration

in each case is antagonistic, unless hypersensitivity may be lost and regained.

Up to this point, then, we have seen that there is evidence for and against a metabolic error, for and against the allergic hypothesis, and against the direct relationship of streptococci to rheumatism. The problem of toxins gives no satisfactory means of advance. The situation is this: that rheumatism is preceded by an upper respiratory infection stimulated by increased activity on the part of hæmolytic streptococcus. We have thus only possibilities to consider, and to find whether any pathological investigations support these.

Assuming that the hæmolytic streptococcus is associated with a second organism, the true provoker of the rheumatic response, does it precede the latter and facilitate its entry? Does it activate an organism already latent in the nasopharynx? Or do the two enter together, the streptococcus producing a sore throat in a short while, and the second organism waiting until circumstances are favourable before producing rheumatic symptoms: circumstances which, in some inexplicable manner, are created by the hæmolytic streptococcus?

Now, if the organism were indwelling in the throat, each subsequent attack of B. streptococcal tonsillitis ought most likely to provoke a rheumatic relapse. Yet cases have occurred where rheumatics have suffered from streptococcal infections, but escaped recrudescences. In such cases, of course, the hypothetical organism might for some reason have disappeared from those particular throats. Alternatively, the organism never resides within the tissues, but arrives either with or after the hæmolytic streptococcus.

Is there any evidence of this second organism? Staining with Giemsa—and this is the best method of demonstrating spirochætes—and dark-ground illumination have failed to reveal a spirochæte. Other bacteria have been claimed to be responsible for rheumatism, but these were said to act independently of the hæmolytic streptococcus. Among these may be mentioned Achalme's bacillus and the tubercle bacillus (Loewenstein). In a number of cases of rheumatism a small, delicate, gram-negative, hæmophilic organism, identical with the bacillus X, has been found. This bacterium was detected quite frequently by Coburn in his investigations of the nasopharyngeal flora, but he does not seem to have held it of any ætiological significance in rheumatism, and no direct relationship has yet been shown.

The claims of a virus, whatever that may be, remain for consideration. Many of the difficulties of the problem of rheumatism could be accounted for if this were the ætiological factor, and some of the histological lesions bear a marked similarity to those in virus infections.

The majority of viruses are ultramicroscopic. A responsible virus would thus explain the failure to find an organism either in the tissues or in the blood by microscopic examination. In some virus diseases intracellular inclusion bodies are demonstrable. This has not been achieved in rheumatism, but by certain staining methods granules of an unknown nature may be found within the tissues. Their significance is not yet established.

Viruses are not easily grown. Culture of any causal organism from the blood or serosal fluids in rheumatism has, on the whole, been consistently negative. Again, a virus infection might cover this difficulty.

Rheumatism is characterised by a predisposition to recurrence once acquired. Some virus diseases seem to predispose to further attacks, as in cases of influenza and recurrent herpes. The entry of a virus is frequently suspected to be via the nasopharynx. A nasopharyngitis precedes rheumatism.

Virus diseases on the whole have a long incubation period, varying on an average from 9 to 24 days. The onset of rheumatism is from 10 to 21 days after the initial disease of the upper respiratory tract. An incubation period at least offers some explanation of the latent period.

Histologically, perivascular cuffing in the brain occurs in toxic and virus diseases. It is found in chorea, and occurs in post-vaccinal, mumps and typhus encephalitis. If a virus infection is acute enough, polynuclears may predominate temporarily in the inflammatory response as in acute anterior poliomyelitis. They also occur in the heart in rheumatism. This would be more in keeping with the presence of an organism or virus in the tissues than with a toxin elaborated elsewhere and circulated.

If a virus is the accessory agent, is it there always, does it enter with the hæmolytic streptococcus, or does it arrive later? None of these queries is, of course, answerable at present. The only shred of information which may have some bearing on the problem is that recently a symbiote of a streptococcus has been isolated in lower mammals, and this has many features akin to those of the bacillus of bovine pleuro-pneumonia. Beyond this there is nothing.

In conclusion, there seem to be but a few indisputable facts to state relative to rheumatism. It has been shown that this is essentially a disease of temperate climates, appearing principally after the patient has experienced an upper respiratory infection; that an attack does not follow immediately upon the latter, but that there is a fairly constant interval between this and the onset of

symptoms; that the infection is caused by invasion of the nasopharynx by the hæmolytic streptococcus, but that this organism is not directly responsible for the rheumatism which subsequently develops. It is suggested tentatively that there is some evidence in favour of an unisolated virus acting in association with the hæmolytic streptococcus, and producing the symptoms and subsequent disabilities of rheumatic disease.

Locums

THIRTY years ago I got qualified and, like so many other recently qualified men, I was fed up with the hospital and decided I would like to earn some money for a change and do "Locums." I went round to see Reaside; most Guy's men went to him in those days. He fixed up a locum for me near Bath. Locums got four guineas a week and travelling expenses—that included second-class railway fare; there are not many railways left now with second-class accommodation. Assistants got at most £150 a year indoor, and that generally meant a colliery district.

The Bath locum was not a good one for a beginner. I had only been qualified a month and registered three days. The doctor of the practice, while away on a holiday, had broken his leg climbing over a stile; his locum had another engagement and could not stay longer.

When I arrived at Bath I found the locum waiting for me. He shoved a visiting book into my hand, said he was sorry he could not stop as his train to London was almost due, and dashed off to the "up" platform. A trap was waiting for me outside the station, and I was driven off to a village some miles away.

It was a very pretty old world spot, one of the show places of the neighbourhood, but I found it deadly dull after a few days. I had to find out everything for myself; there were only two young maids in the house. My only excitement was playing chess with the Vicar. I remember only one worrying case, an abortion running a high temperature. I was very suspicious as to the cause, but she told me nothing, and fortunately recovered. I used to fill up the day driving about the country. The coachman never understood how I came to arrange the visits so badly, and told me his doctor visited one district a day.

My second locum had an address in West Kensington. I had always thought of Kensington as an aristocratic suburb, so I hunted up my frock coat and top hat and borrowed an umbrella, expecting to pay my visits in a carriage and pair. It turned out to be a slummy part round Notting Hill Gate. I did not like the doctor; I remember he took out a cigarette case, helped himself, and put it back in his pocket, saying, "I find men always prefer to smoke their own brand." It does not matter much to a locum what his principal is like, unless he is laid up in the house. The people he leaves behind are far more important. In this case it was his wife and two daughters, who treated me very well. The doctor took me round to the surgery, about a quarter of a mile away, in a main street. It was a converted shop; you entered straight away into a large waiting room, in the middle of which was a round one-legged rickety table, with a grubby lot of magazines on it, and round the room the most miscellaneous lot of chairs I have ever seen, ranging from a kitchen chair to a worn-out wicker one. On the walls were framed pictures from old Christmas numbers. Partitioned off from this was a smaller room, where one had to have artificial light all the time. The furniture consisted of a desk and two chairs and an old-fashioned sofa, one of those horse-hair covered abominations; how the patient managed not to slip off while being examined I don't know. I never used it. Round the room were framed diplomas—one, I noticed, from the College of Preceptors.

There was another small room at the back, which he called the Dispensary. It was not much more than a cupboard, but there was plenty of room for all the drugs, which consisted of a Winchester of Liq. Ferri-Perchlor. Fort., a canister of Mag. Sulph., and a jar of Ung. Hydrarg. Ammon. Dil. There were no scales or measures, only a few dirty bottles. He very kindly remarked that if there was anything I could not find I might get it at the local chemist, but he hoped it would not be necessary. I am afraid it was.

The practice consisted almost entirely of a large factory club. There was very little to do and no trouble about repeating the medicines, though he kept no prescription book. I found out later that practically every word said in the consulting room could be heard in the waiting room, which must have relieved the tedium of waiting. I had very few visits, and generally finished up about eleven. I filled up the morning by strolling to a café in Westbourne Grove, as I did not care to be back at the house before one.

My third locum was a really busy affair. It was in an awful factory town in Lancashire, built

for a local iron foundry and named after the manager. It was made up of rows and rows of little houses all exactly alike.

The doctor was laid up in the house, through a nervous breakdown. I am not surprised. The practice was composed almost entirely of a club; the charge was ½*d.* a week per head, more than four children in a family free, and confinement 15*s.*

I don't suppose he made more than £500 a year, and worked hard night and day. The doctor refused to see me or hear anything about the practice, and I don't blame him. There was an unqualified assistant, an elderly man, who had been doing the work for the last three days, which was very awkward for me, as the patients all knew him well and much preferred him to a youngster like myself. But I was very nervous—I had visions of being had up before the G.M.C. for covering, and would only let him do dispensing and book-keeping. He was a very good sort, one of the old-fashioned type, always talking of going up for his Finals. I heard he had talked like that for years.

I had plenty to do, 20 to 30 visits a day—there was a measles epidemic on. The doctor had hired a handsom cab for me to drive round in, the understanding being that I was to cycle when I got to know my way about. I am afraid I never did; I was always a bad hand at getting to know a new place.

Besides the assistant and myself, there were only the doctor's wife and a grown-up daughter. I did not see much of the doctor's wife, except at meals, as she spent most of her spare time up in the bedroom with her husband.

The daughter was a buxom, good-looking girl, rather of the "come-hither" type; nowadays she would be in the forefront of the over-rouged, plucked eyebrows and painted nails brigade. Somehow we were always left alone together in the evening. I usually found something to do in the surgery, or even faked a visit, though I was a bit nervous of her suggesting she would like a little fresh air and coming with me. I don't know now whether her intentions were strictly honourable or not. Poor girl, it was not a promising outlook for her in that limited hole—not even a curate, only a much-married middle-aged vicar.

I did one or two locums after that before getting a resident hospital job, but I have practically no recollection of them; it is always one's first experiences one remembers.

Intra-Capsular Fracture of Femur Treated by Smith-Petersen Pin

MRS. H., *æt.* 63, was admitted under Mr. Hughes on April 5th complaining of great pain in the right hip after having fallen down a flight of ten stairs. On admission she was seen to be a well-preserved woman and was obviously in very great pain. On inspection of the leg it was found to be externally rotated and shortened, and any slight movement of the joint itself was extremely painful. There appeared to be some fullness about the hip, but no obvious bruising.

On X-ray examination there was found to be an intra-capsular fracture of the neck of the femur. The greater trochanter was elevated and the two fragments were pointing anteriorly.

On consideration of the case it was decided that, in view of:—

1. the age of the patient;
2. the inevitable delay in securing proper union of the fragments;
3. the probability of pulmonary complications intervening during prolonged extension of the limb by ordinary methods;
4. the mentality of the patient:

the fracture would be suitable for fixation by means of the Smith-Petersen pin.

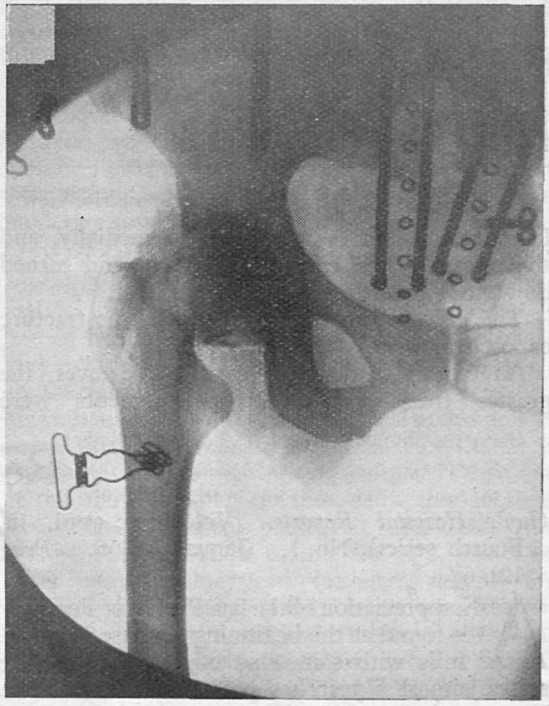


Fig. I—The fracture on admission

Accordingly, the patient was given a spinal anæsthetic and the operation was performed by Mr. Hughes, assisted by Mr. Ferguson. A Hawley table was used to facilitate adequate extension and abduction.

It might be interesting to describe briefly the technique of the operation. The hip joint was exposed by an incision running along the crest of the ilium for its anterior third, then down the line of the sartorius for six inches. Tensor fasciæ femoris was cut from its pelvic origin and retracted laterally. Sartorius was retracted medially, and the origin of the rectus femoris cut and turned down to expose the capsule of the joint.

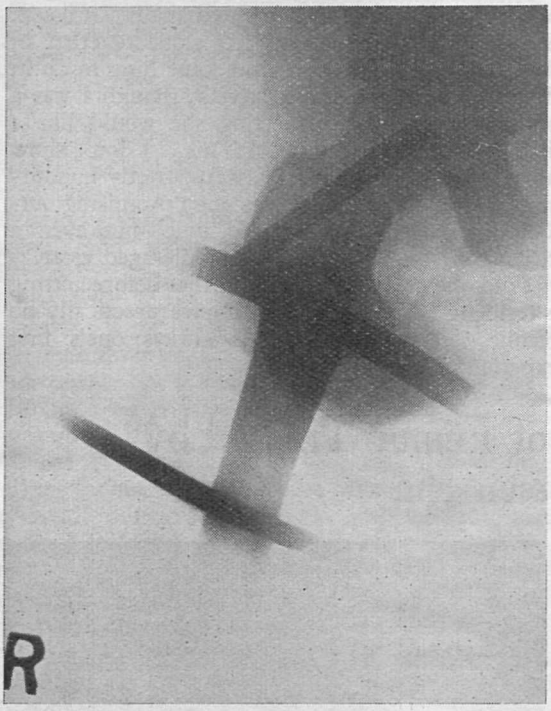


Fig. II—The pin in position, antero-posterior view

The capsule was then opened and the fracture exposed.

Another incision was then made over the greater trochanter, and the fragments were approximated by abducting and slightly internally rotating the leg.

A drill hole was made from just below the trochanter up the neck of the femur into the head. The pin was then driven home up to the head of the bone, while the fragments were held in place by a lever.

The incisions were then sewn up and the patient returned to bed, when the limb was put in extension and abduction.

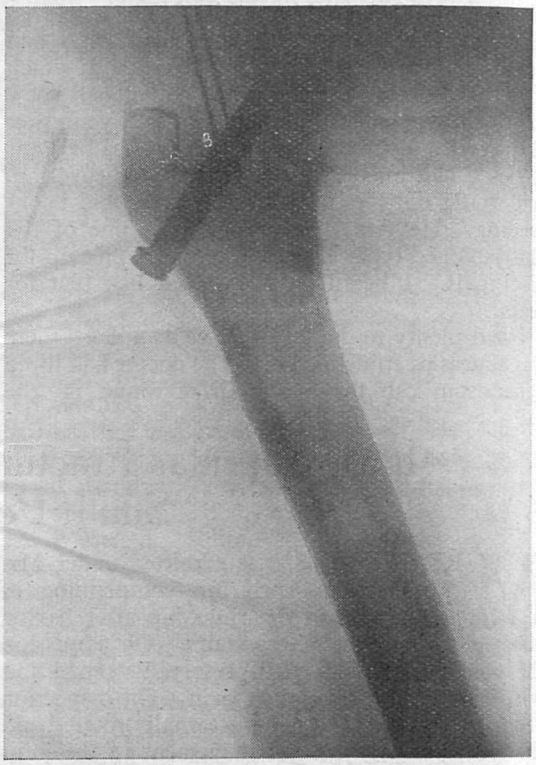


Fig. III—Oblique view of the pin

As will be seen from the accompanying X-ray photographs, perfect apposition of the fragments was obtained, and the case is of particular interest as it must be the first operation of this nature performed by a general surgeon in this hospital for some considerable time.

D. N. L.

Reviews

Guy's Hospital Reports. Vol. 85. (Vol. 15, Fourth series), No. 1. January, 1935. *Price* 12*s.* 6*d.*

AN appreciation of the late Professor Pembrey is found at the beginning of these Reports. It is with somewhat of a shock that we realise almost a year has passed since his death. Yet a reminder of his life and work after such an interval is much to be desired, for now we can see more clearly why the memory of him will endure. The fighting spirit—in an insipid and placid age—the loathing of hypocrisy and cant and the love of independence stand out as being the underlying principles governing his life. It is of these characteristics that the writer of the appreciation chiefly reminds us. He does not

only give us mere details of Professor Pembrey's life, but shows us something of his personality "which no school or system of training could have cast into its mould."

Professor Nicholson, continuing his "Studies on Tumour Formation," reviews the literature on Fœtiform Ovarian Teratomata. For those of us who are prone to regard scientific writings as a mixture of bad English and unintelligible jargon, only to be read for the conclusions which are subsequently disproved, Professor Nicholson's article comes as a breath of fresh air. Although one feels that his chief aim has been to serve up an intellectual feast, yet never for a moment can it be forgotten that the fœtiform teratomata are being very carefully and critically analysed.

Briefly, his argument is that the essential orderliness of growth and structure which holds good for a normal fœtus does not apply to these teratomata, although superficially the normal arrangement may be mimicked.

Fifteen of these growths are recorded in the literature, but of these four are so poorly described as not to merit attention. The remainder are dealt with at some length. Stress has been laid upon the *apparent* similarity between the external configuration of the monster and that of a true fœtus. Répin accepts without question that certain appendages of the tumour are legs and arms, while subdivisions of the main mass are labelled head and thorax. When such subdivisions are examined critically it can be seen that there is no justification for most of them. The "head" in Répin's case consists of a lump of flesh surmounted by three teeth; that is all. There is no evidence of segmentation, and "we are no more bound to accept this region as a head than its homologue in an ordinary dermoid without appreciable fœtiformity."

The shape of the trunk is probably the result of physical stresses within the cyst, there being again no evidence of metameric segmentation and no relationship between certain rib-like structures and the main bulk of the trunk.

The arms and legs are admitted by Professor Nicholson to be fœtiform; fingers and toes together with nails are easily recognisable. This, however, is not evidence of fœtiformity of the whole monster, but merely serves to exemplify the general principle that the "distal ends of somatic malformations tend to be more perfect than the attached basal ends."

An investigation of the genitalia of these manikins provides no evidence at all of fœtiformity, and in his conclusion Professor Nicholson states that any similarity between the fifteen teratomata is due, not to fœtiformity, but to some simple physical process within the cyst wall.

Mr. T. W. Adams and Dr. E. P. Poulton have contributed part two of their study on Heat Production in Man. This is a highly technical and abstruse article, and the reviewer regrets that he has not the understanding necessary to fathom it. Surely it should be possible to make a subject such as this more intelligible to the average reader. Confronted by monstrous graphs, one hurries to the conclusions to find that under basal conditions in the body carbohydrate and fat are burnt in a fixed ratio roughly $1 : 1\frac{1}{3}$; that on a fat and protein diet a rise of the respiratory quotient is associated with a fall in the oxygen production, the carbon dioxide remaining constant; and that the conversion of carbohydrate into fat shows that the carbon dioxide results solely from combustion, and that the oxygen must be involved in both combustion and conversion.

Miss Duguid, of the Psychological Department, gives us an interesting account of Congenital Word-Blindness and Reading Disability. She defines very clearly what is meant by pure word-blindness, namely, the inability to read in an otherwise normally intelligent child. Conditions with similar symptoms occur (1) where there is a degree of visual imperception, (2) where there is a combination of factors, but where emotional disturbances seem to play a large part, (3) in left-eyedness, where there is a tendency to read backwards.

Various case-histories are cited, examples being given of all except the last group. The prognosis would seem to be better where something definite is found; group 2 is not so amenable to treatment. In all, however, it is obvious that an immense amount of labour is necessary to achieve even moderate results.

Dr. Knott and Dr. Bruce Pearson deal with the eosinophil concentration in the sputum of asthmatics. The sputa are divided into three groups—one in which the concentration of eosinophils is very marked and that of bacteria minimal; another in which the two are present in equal quantities, and a third where bacteria predominate. From this, however, they do not infer that it is always possible to pigeon-hole asthmatics into one of the above; rather do they show that there is *some* allergic element present in every case, for over 90 per cent. show eosinophils to a greater or lesser extent. They give excellent reasons for believing that eosinophils mean hypersensitiveness. In the group where the infective element is maximal it is concluded that this is the precipitating factor; the allergic element is too mild in itself, but

renders the individual more liable to bacterial invasion.

From a general medical standpoint "Observations on Gastritis," by Dr. Keith Simpson, is the most interesting and original article in these Reports. He has analysed 161 biopsy specimens of the gastric mucosa, and there is, therefore, no question of post-mortem changes obscuring his deductions.

First, it is shown that gastritis accompanied all the conditions for which operation was performed, and it is virtually proved that this gastritis was the primary lesion. Next, gastritis is classified.

Parenchymatous and erosive lesions form the acute type; the former is associated with necrobiosis of the epithelium, and occurs as a complication of acute fevers; temporary anacidity is the rule. The latter has surface hæmorrhages as its characteristic, and is linked with hyperacidity; it passes imperceptibly into the typical peptic ulcer, one of the predisposing causes of which is increased secretion of hydrochloric acid.

The mamillary or hypertrophic gastritis is the most important of the sub-acute types. Hyperplasia of the entire mucous membrane is found; there is a definite association with duodenal ulcer and hyperacidity is the rule. Chronic forms are synonymous with atrophy of the mucosa, and occur mainly with carcinoma ventriculi.

From this two important facts emerge which at first sight appear contradictory :—

1. That hyperchlorhydria may co-exist with severe degrees of gastritis.

2. That the worse the gastritis, the lower is the acidity.

The apparent discrepancy is to be explained by assuming that the secretion of HCl. persists as long as possible even in the face of gastritis; also that the hyperacidity before the onset of gastritis may have been extreme.

Dr. Simpson has definitely made our test meal charts more interesting; we now ought to be able to give a correct opinion as to the state of the gastric mucosa.

Mr. Pantin reports a case of mid-line cerebellar tumour which was treated for a time as hysteria; this is the most interesting part of the story. As soon as one definite sign had appeared, it was not long before a typical cerebellar syndrome became established.

Hale-White's Materia Medica. Revised by A. H. DOUTHWAITE, M.D., F.R.C.P. Published by Messrs. J. & A. Churchill, Ltd. Pp. 550. *Price* 10*s*. 6*d*.

THE twenty-second edition of this work, which during the last forty years has been widely used by both practitioner and student, gives first, a general account of pharmaceutical processes, weights and methods of prescription, and then deals with specific drugs which it divides into two main groups. Into the first come those whose action is chiefly local—the antiseptics, the arthelminthics and the purges; the second contains seriatim most of the other drugs of the pharmacopœia grouped for the most part according to chemical constitution.

Such an arrangement is most convenient when looking up the properties of a particular drug; it is, however, less helpful when the inquiry is made for the means of producing a desired therapeutic effect.

The range of drugs described is extremely comprehensive, and their chemical, physical and pharmacological properties are concisely given under appropriate headings. The space devoted to these physical and chemical properties is probably of greater value for the pharmacology examination in its present form than in all probability it will be in the future, when it appears likely that that examination will be abandoned as an entity and absorbed into the physiology and final medicine examinations.

In this edition the section on barbiturates has been rewritten and extended to include a classification and a simple and clear correlation of chemical composition and therapeutic properties. Preceding the account of the drugs acting on the sympathetic and parasympathetic is a description of the modern views on the physiology of these systems which very much helps an understanding of the mode of action of the drugs.

The number, variety and nature of proprietary preparations make any detailed consideration of them outside the scope of any text-book. Some of the more widely used—coramine, salyrgan, novutox and pentnucleotide—are, however, described here. A brief account of unofficial drugs such as pituitary and ovarian extracts, sera and vaccines further indicates the very wide field which Dr. Douthwaite has covered in these pages.

Forensic Medicine. By DOUGLAS KERR. Published by Messrs. A. and C. Black. *Price* 15*s*.

THE author states in his preface that he has attempted to write this book to suit the requirements of both student and general practitioner. We may say without further ado that he has succeeded admirably.

His first chapters deal with the ethical problems and the legal responsibilities which fall to the lot of every qualified man, and he has substantiated his views with quotations from the sayings of some of the great judicial authorities. He then passes on to the questions relating to the deduc-

tions which can be made from the finding and examination of the dead. In this section he has illustrated the text with many photographs. A chapter on the examination of the blood is clear and the theoretical basis of blood grouping is explained. It is, perhaps, a little unfortunate that he has used the Jansky classification of the blood groups, for it entails placing the universal donors in Group I and the universal recipients in Group IV, which is the inverse of the classification which has been adopted by the Blood Transfusion Service.

The next chapters deal with the various types of sexual crimes, and finally he deals with lunacy and the regulations governing certification. This is the only account of these regulations which the reviewer has been able to understand, partly because the author has had the wisdom to reproduce a medical certificate completed in the required manner.

The last hundred pages of the book are devoted to Toxicology, and here again clearness is the keynote of the text.

In these days when murder and suicide seem so rife Forensic Medicine takes on a new interest and an added importance, and perhaps the best way of recommending this new book is to say that it adds great interest to the subject. The author has succeeded by reason of the clearness of his style of writing, the pictorial illustrations, and by forcing home his points by reminding his readers of some of the famous trials which have been held during recent years.

A Text-book of Surgery for Dental Students. By MILLS and HUMPHREYS. Published by Messrs. Edward Arnold & Co. *Price* 14*s.*

THE conservatism of the examining board has rendered a difficult task somewhat easier. The new edition, the fourth, covers the L.D.S. syllabus quite adequately.

A new chapter on the uses, indications and contra-indications for anæsthetics has been incorporated, and the chapter on the development of the face and jaws has been rewritten.

It has been greatly improved by the inclusion of numerous photographs and diagrams; otherwise the general layout of the book has not been varied to any great extent.

It seems regrettable that in a book of this character more space has not been devoted to Odontomes and the comparatively new British Dental Association classification of them.

All students of dental surgery who are contemplating the purchase of a book on general surgery would be well advised to choose the new edition of an already well-known and standardised work.

J. W. H.

Gastritis and Its Consequences. By KNUD FABER. Published by Humphrey Milford, Oxford University Press. *Price* 8*s.* 6*d.*

PROFESSOR KNUD FABER has here reproduced in a somewhat enlarged form the lectures which he gave at Guy's in November, 1934.

The book is stimulating throughout, particularly in those parts where we may be inclined to disagree. Several of the principles laid down by the Guy's School are challenged, notably the conception of a gastric diathesis. Professor Faber holds that hyper- or hypoacidity has no constitutional basis, but is directly produced by varying degrees and types of gastritis.

Gastritis is regarded as the precursor of all types of peptic ulceration, but certain specified forms of the inflammatory process are more likely to produce it than others.

A long and very useful chapter is given to the appearances of the normal stomach. Gastritis is then defined and classified, and the second half of the book is mainly concerned with the hydrochloric acid secretion in the various forms of the disease.

Finally there are short accounts of gastric carcinomata and pernicious anæmia.

Correspondence

Invalid Children's Aid Association
(Bermondsey Branch)

To the Editor of the GAZETTE

SIR,—On Wednesday, June 26th, the English String Players will give an orchestral concert in the Queen Mary Hall, Y.W.C.A., Great Russell Street, W.C.1, at 8.15 p.m., on behalf of the above branch of the I.C.A.A. This branch has particular associations with Guy's in that Sir Alfred Fripp did much work for it and was its first chairman, and through its aid a large number of children from the hospital are year by year cared for and sent for long periods of convalescence. But the branch sadly needs more funds if it is to continue its invaluable work at the same level as heretofore. With this aim in view Major Ian Hay Beith, one of our Governors so well known to many of us, has most kindly consented to make an appeal at the concert, and my committee are most appreciative of this token of his interest and support. And there are still other attractions, inasmuch as our kind friends the English String Players will give us, as I know from previous experience, a most delightful evening, and our audience will have the additional pleasure of hearing several solos by that fine singer Miss

Joan Coxon, who has also volunteered to help us.

No charge is made for admission. We shall welcome all Guy's men, sisters nurses and their friends, and the more the better.

If those in sympathy with our object, but who nevertheless are unable to come and place their contributions in our hat, will send their notes or half-crowns to me at the above address they will be most gratefully accepted, and some Borough child or children will have cause once more to bless the name of Thomas Guy and the many generations of his faithful followers.

Yours, etc.,
JOHN FAWCETT,
Vice-Chairman of the I.C.A.A.
and Chairman of the Bermondsey Branch.
10, Chester Terrace,
Regent's Park, N.W.1.

Rugby "Supporters' Club"

To the Editor of the GAZETTE

SIR,—May I make a suggestion through the *Gazette* as regards last year's rugby football? I had the good fortune to watch a number of games at Honor Oak Park and a few away matches, but I was astounded by the lack of support on the touch-line from members of the Hospital.

Will some ardent supporter start a "Supporters' Club" and relieve those few who go and support Guy's from their misery, and let us hear once again "G—U—Y—S—Guy's!"?

Yours, etc.,
GEORGE G. ELLIS.
The Lister Guest House,
1, Park Street,
Hitchin, Herts.

Sport

Golf

DR. CAMERON'S PRIZE

THIS meeting was held at West Kent on May 22nd. Conditions were in favour of good golf. There were 18 entries, which, although fewer than last year, was a good entry.

The Scratch Cup for 36 holes was won by P. B. Hanbury with a fine gross score of 158.

The 36-holes Medal was won by A. Walton playing off 14 with a net score of 151.

The morning 18-holes Medal was won by H. D. Smith with a 73 net, and the afternoon 18-holes Medal by P. Wilson with a 74 net.

The Annual Meeting of the United Hospitals' Golfing Society was held this year at West Hill on May 29th. Here we were very pleased to see two members of the Staff, Dr. F. A. Knott and Dr. E. R. Boland. There were only eight students present, but this did not prevent Guy's from being well to the front. In the first round P. B. Hanbury had a fine gross score of 76, which gave him a 75 net, with which he won the Second Sweep. His 76 gross remained unequalled all day. In the second round A. Walton, playing off 14, did very well to be round in 89—14—75 net. With this score he won the first sweep.

Hospital Information, etc.

Pass List

UNIVERSITY OF CAMBRIDGE.

M.A.

G. E. Walker — J. B. C. Murdoch

UNIVERSITY OF LONDON.

THIRD M.B., B.S.

May, 1935.

Honours.

J. R. Forbes.

(Distinguished in Medicine.)

Pass.

I. A. Cathie
J. F. A. Forster
A. E. Jones
J. B. H. McArthur
D. S. Piper
A. G. Potts
V. B. Reckitt
W. H. Summerskill
F. H. Weston

GROUP I.

W. N. Mann — B. L. E. Wong

GROUP II.

C. J. F. Blumenthal — W. L. Ogle

TREASURER'S GOLD MEDAL AND PRIZE IN SURGERY.

P. W. Clarkson.

Papers by Guy's Men

A. H. Douthwaite. Pyrexia of obscure origin. *Lancet*, 1935, i, 1320.

A. Ralph Thompson. Stricture of the external urinary meatus. *Lancet*, 1935, i, 1373.

W. Sampson Handley. Prognosis of simple moles and melanotic sarcoma. *Lancet*, 1935, i, 1401.

Change of Address

J. W. Mansie, 16, Magdalene House, Manor Fields, Putney, S.W.15. *Putney* 6874.

Birth

LEWIN.—On May 20th, 1935, at King's Lynn, to Ghita, wife of John Lewin, F.R C.S.—a son.

EDS. {P. W. C. M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

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PASSIM

IT is said that no men know a city so little as those who inhabit it, and we wonder, applying this to our own world, how many there are who have never been inside our chapel, and how many there may be who have never viewed the Guy's Museum of Antiquities. Thomas Guy's fortune was chiefly amassed from those two great phenomena—the Bubble and the Bible. We feel that our erudite contemporary, the *Christian Herald*, which every now and again, in some reference to Thomas Guy, reminds us of what we owe to the latter, somewhat understresses the extent of our debt to the former, but be that as it may, we still have, apart from his money and the skeleton in the crypt, certain relics of our founder in the shape of his walking stick, some rings, and a few specimens of the Holy Book on which the Hospital was founded. It is these that form the nucleus of the Museum of Antiquities, which has naturally found its way to become the property of that great protector of the Hospital interests, the *Gazette*.

We have never noticed, we must confess, an undue press of people anxious to survey these souvenirs, and it is possible that it may not come as a shock to our readers to learn that the Museum has been moved. What may, perhaps, interest them more is the fact that the Wills Library is to be extended to provide further accommodation for the increasing number both of books and students, and it is to provide for this extension that the *Gazette* Committee has agreed to allow the room previously devoted to the Museum to be used for this purpose. The relics are to be housed elsewhere, and we hope in a later number to be able to inform those whose historical curiosity has been aroused, where they may be able to examine these mementoes of a momentous past. In the meantime there is to be a bigger and better library, and what is past history that it should stand in the way of present progress?

WHAT is the cheapest way of spending a night in London? We all know the familiar alternatives that present themselves after the departure of the last train. The Y.M.C.A. in the Tottenham Court Road, which does not, perhaps, make a popular appeal to the decadent younger generation; the Embankment, which is draughty; the crypt of St. Martin's-in-the-Fields, which, however, necessitates rising at 6 a.m., and, for those that can afford it, the Turkish Baths. The deficiencies of each are obvious. It is a question which we, who have tried all of them, can answer to our own satisfaction, though there is on the point no universal agreement.

There can hardly be room for doubt, however, that the cheapest and pleasantest way of passing a week-end in the country is, little though we may suspect it, open to all of us. And this only bears out the contention that we have already expressed that it is those who live in a place who know its advantages least. The barge at Burnham of the United Hospitals' Sailing Club provides sleeping accommodation for 1*s*. a night and more than adequate feeding at a proportionately low cost. While there, the *Glebe*, the Hospital dinghy, may be sailed, or if a larger vessel is wanted it is possible to hire an oyster-catcher. These opportunities for sailing during the day, and for listening to the still waters lapping at the barge-side during the night, are open to members of the Hospital who belong to the United Hospitals' Sailing Club, for membership of which application should be made to the Secretary.

THE publicity which illuminates so brightly in the winter the activities of the Rugger Club does not beat as fiercely on the summer games, and many in the Hospital remain unaware of the progress of the teams in the inter-hospitals' competitions. We feel that a brief mention of the various club activities in these columns may attract attention which it might otherwise escape.

The Cricket Club has this year had a younger and better balanced team than it has had for many years. On Friday the 5th of July it is playing in the semi-final of the Inter-Hospitals' Cup against Middlesex Hospital.

For several seasons the Tennis Cup has appeared to rest between ourselves and St. Thomas's, whom we have for some time been due to meet in the second round. When eventually this fixture takes place, a game at least as close as last year's is expected.

The Inter-Hospital Shield for Athletics has already been won by the Hospital; in the Armitage Cup for Shooting, which was won easily by St. Mary's, the Hospital eight was third; the Swimming was held on Thursday, July 27th, and resulted in a win for St. Bartholomew's, our own team being third.

Detailed reports of these activities appear in the *Gazette* when we receive them, and we would like to remind the club secretaries that during the summer the editors are particularly dependent on them for news of their clubs.

WE congratulate the following on their appointment as Clinicals :—

W. W. Cashmore	C. A. Lillicrap
P. W. Clarkson	D. F. G. Moir
M. J. Harris	A. Ponder

Vaso-Lability in Children

A Lecture by Dr. H. C. Cameron, M.D., F.R.C.P.

IN childhood a profound vasomotor anæmia, a fault not of blood formation but of blood distribution, is a common symptom. Children with this conspicuous pallor are often spoken of as anæmic. Yet as a rule the number of red cells and the percentage of hæmoglobin show no significant diminution. Under the stress of excitement or after exertion the face may flush for a moment, but the colour is not held. Very soon the blood falls away from the surface again, leaving the skin pale and cold, and imprinting upon the child a look of exhaustion or even of actual illness. In such a case the mother is apt to complain that everyone who meets the child has but one comment, "How ill that child looks!" No doubt many of these children, though thin and pale, make no complaint, and their parents may be astonished at the contrast between the look of exhaustion or fragility and their ceaseless energy. Nevertheless, it is in association with this abnormal lack of tone in the vasomotor system that very often we find certain constantly recurring symptoms, which are not only distressing to the child but which are, for the most part, just of the nature to raise the fear of serious organic disorder in the minds both of the parents and of the doctor.

I propose to discuss the symptomatology of this common state of Vasomotor Weakness or lability. I must confine myself to the more direct results of what is apparently a primary and persistent vasomotor weakness. To consider the association with the numerous forms of acetonæmic crises, obvious as that association is, to discuss the increased liability to cold catching, which seems part of a condition in which the vasomotor defences against chill are so ill-developed, or to include the innumerable cases in which a temporary vasomotor weakness is apparent in convalescence from acute illness, would carry me too far from my subject.

I.—ABDOMINAL PAIN

When nowadays a child, aged from four to, perhaps, fourteen, complains of severe abdominal pain, the fear of appendicitis is naturally aroused in the minds of the parents and the doctor. The emphasis rightly laid upon the need for early operation in appendicitis, and the anxiety of the parents for a definite pronouncement, have had the result that cases of abdominal pain in childhood are very commonly submitted to operation, unless a confident assurance can be given to the parents that appendicitis is not present. It follows that those whose duty it is to separate the small number of doubtful but genuine cases of appendicitis from the very much larger number of cases of abdominal pain due to other causes should be very familiar not only with appendicitis as it occurs in children, but with other and more common conditions which are causes of abdominal pain. It was with this in mind that in 1913 Moro, of Heidelberg, called attention to what he called "Relapsing umbilical colic of older children." Such cases had indeed been discussed before. So long ago as 1866 Wertheimber, unknown to

Moro, had given a description in almost identical terms. A child, in the midst of wholehearted play, when out for a walk, or when seated at table, will grow suddenly pale and complain of abdominal pain. The duration of the pain is usually quite short—twenty minutes may be an average time. Exceptionally it may last for some hours. The pain is of intermittent intensity, referred as a rule by the child to the umbilicus, sometimes to the epigastrium, but occasionally to the lower abdomen. Often he seeks relief by restless changes of position and by pressing upon the abdomen with the hands. On palpation there is often complaint of a diffuse tenderness which may rarely persist for some time after the pain has ceased. Vomiting is not very common, although the child feels sick. Yawning or sighing is a frequent accompaniment. The bowels may be quite normal, or there may be looseness or constipation. True muscular rigidity is not present. The pain is sometimes said to come on after exercise or after emotional excitement, induced by the thought of going to school or the prospect of meeting strangers. At times the attacks seem to recur in a cycle with long intervals of complete freedom.

Moro laid emphasis on the type of child prone to this form of abdominal pain—active, sensitive, perhaps precocious, over-stimulated, or surrounded by an atmosphere of anxiety and overcare. In his opening sentences he suggests, a little unkindly, that if he were to give a lecture on the ailments to which doctors' children are peculiarly prone he would give this condition first consideration. Both Czerny and Finkelstein, great names in German pædiatrics, have expressed the same view that the disturbance is a visceral neurosis.

No one who has had experience with children can doubt that cases of this sort are of very frequent occurrence. How the pain is produced is not so clear. The suggestion that small hernial protrusions through the linea alba are invariably present and are productive of the pain is easy to disprove. A degree of enteroptosis has often been demonstrated, and certainly the posture is often defective and the skeletal muscles apt to be slack and toneless. Long before I was aware of Moro's communication or of the implications of the term " umbilical colic " as used on the Continent, I had recognised and written about these attacks of abdominal pain in nervous children. To me it seems that their explanation must in some way be connected with the sudden pallor which always accompanies the pain, as though the blood falls from the surface while the splanchnic area is engorged. During the pain the pulse is often rapid and weak and the differential pulse—that is the difference between the pulse rate standing and lying down, is very high. The actual pain is not always severe—it is sometimes spoken of as " a funny feeling," but whether slight or severe it is always accompanied by subjective sensations of illness. Older children will compare the feeling to that of car sickness or sea sickness. Often it is apt to produce a state of panic or apprehension, so that the child may be in tears and wants to know what it is and why he gets it. With younger children at least, with the passing of the immediate feelings of distress there is a quick return to activity and to the interests of the moment.

The most characteristic features of the attack are thus, briefly, the extreme pallor which accompanies it and its brief duration. The severity of the pain seldom appears sufficient to produce directly so striking a condition of pallor and vasomotor collapse. The pain seems to be rather the result than the cause of the circulatory disturbance, and indeed it is not unusual to find in the vasolabile child attacks of pallor and vasomotor weakness quite without abdominal pain. A similar epigastric pain is encountered sometimes in the vasomotor disturbance which accompanies insulin hypoglycæmia.

If due attention is paid to the history of the complaint as well as to the character and surroundings of the child, if examination is not confined to the near neighbourhood of MacBurney's point, it is almost always possible to make a clear distinction between pain of this sort and appendicitis. Warmth to the abdomen, sal volatile, belladonna, glucose, the confident reassurance both of the parent and the child that there is no fear of appendicitis—there can be none, of course, after its removal—suggestive treatment such as a plaster applied to the umbilicus—by these means the pain can always be controlled. The symptoms are due to exhaustion and overstrain in a susceptible child, and are to be treated in the main by readjustment of the child's mode of life.

The recognition of this form of abdominal pain is often made more easy by its association with other symptoms which are characteristic of the vaso-labile child, which may be considered more briefly.

II.—PERSISTENT IRREGULARITY OF THE TEMPERATURE CHART

The fear of some obscure but persistent infection is bound to be aroused when it is found that the temperature regularly shows a rise in the evening to 100° F., or even higher. This irregularity of the chart may persist for many months, sometimes even for years. Its presence is usually a quite

accidental discovery of the thermometer. Perhaps after some transitory infectious illness, such as an attack of tonsillitis or of influenza, it is found that the temperature does not return to normal. It is a characteristic of these raised temperatures in the vaso-labile child that there is nothing in the child's appearance to suggest pyrexia. At the time of the greatest rise he is not flushed or hot, but has rather an excess of his usual pallor. The rise is often very transitory. In half an hour a second reading may show the temperature to be sub-normal. Often the reading at 2 a.m. and 6 a.m. is as sub-normal as the readings later in the day are above the normal. There is no real plateau of temperature, only a greater degree of daily variation. Excitement or exertion commonly increases the rise.

In such a case there must be a careful exclusion not only of appendicitis, but of a host of conditions any one of which is capable of causing a slight continued pyrexia. Glandular tuberculosis is especially to be considered. In the vaso-labile child, however, an irregular temperature curve in this sense is to be expected. I have often demonstrated the raised temperature when it had not been suspected or detected before.

III.—FAINTING AND TRANSIENT STATES OF CONFUSION

In many cases, sometimes accompanied, sometimes unaccompanied, by complaint of abdominal pain or unpleasant epigastric sensations, we meet with recurring "faints." The mother commonly speaks of the child as growing white and losing himself. If unsupported, she thinks he will fall. Vomiting is not often complained of, but he feels deadly sick. If spoken to he barely answers, but he does not seem altogether to lose consciousness. The attack is clearly alarming to the child, and he may be tearful and upset for some time afterwards. At times the diagnosis between such attacks and epilepsy may not be easy. As a rule they are of much longer duration than is the case with petit mal. Even when they are frequently repeated over a long period there is no psychical deterioration, and no impairment of the finer muscular control. The child is aware of the approach of an attack and views it with apprehension.

IV.—TRANSIENT MUSCULAR PAINS AND CARDIAC SYMPTOMS

Finally we may note the frequency with which the vaso-labile child complains of transient pains in back and limbs. Since these are usually associated with the characteristic irregularity of the temperature curve and with a rapid pulse, and sometimes even with functional cardiac murmurs in a heart which appears to be dilated, the differential diagnosis from rheumatic endocarditis may be very difficult. Both conditions, too, show a striking vasomotor anæmia. Sometimes the true diagnosis can only be made after prolonged observation and repeated examination. The pains in this condition are, it is true, muscular rather than arthritic. The child often desires to have the limbs rubbed or massaged, and the joints moved in a way that would be resented in rheumatic arthritis. Wrists, elbows and shoulders are comparatively seldom involved. The pain is due to fatigue and stiffness in the weak and toneless muscles which are involved in standing and walking. The posture as a whole shows the weakness of the antigravity musculature. Rest is usually quickly curative, and while in bed no complaint is made. If, contrary to the usual rule, pain is present about the wrist, elbow or shoulder joint, inquiry may show that the child had been subjecting these joints to unusual strain, as, for example in the gymnasium, or in turning a mangle, or on a skipping rope. These are not, it must be admitted, very substantial points on which to base a separation of the two conditions. In the absence of clear evidence of rheumatic infection, of rheumatic nodules, for example, or of chorea, or undoubted cardiac involvement, it is wise to await confirmation before founding a diagnosis of sub-acute rheumatism on the ground of transient pains in the limbs, a rapid pulse, and some irregularity of the temperature curve. It is a serious error to overlook appendicitis or acute rheumatism in a child, so serious that there is a corresponding risk of a too frequent diagnosis.

The vaso-labile child, emotional, precocious and easily exhausted, constantly changing colour, prone to bouts of abdominal pain, to fainting, to cardio-vascular asthenia, with an excitable pulse and an irregular temperature curve, is apt to be subjected sometimes to an operation for appendicitis, sometimes to a prolonged course of rest in bed for acute rheumatism, or for suspected tuberculosis. He stands these therapeutic measures peculiarly ill. He is, indeed, badly in need of respite from the anxiety and apprehension which surrounds him, and which the visit to the hospital or nursing home will increase. Especially he stands being bedridden badly. New interests, an open-air life, gentle exercise with much resting, hydro-therapy and massage, are more likely to help to restore tone to his muscles, skeletal and vasomotor, than prolonged rest in bed.

A Visit to Amsterdam

LAST year the Faculty of Medicine at Amsterdam invited a number of students from St. Thomas's Hospital to attend a course of lectures to be given in English and to inspect their hospital and university. This year the invitation was extended, by courtesy of St. Thomas's Hospital Physical Society, to Guy's and other hospitals. Three Guy's students availed themselves of this offer and joined the party, which consisted of twelve St. Thomas's men and one Bart.'s man.

The stay was for four days, during which time we were fully occupied either as students or visitors. We were accompanied by at least one Dutch student wherever we went, so that we had no difficulty in finding our way about. Both students and qualified men spared no pains to entertain us.

We left England in a typically English summer downpour on Sunday, May 19th, and arrived in Amsterdam the following morning at 8 a.m., suffering from nothing worse than an ache for breakfast. Our rooms had been booked for us at the Hotel Centraal, which was all that its name implies, with a pleasant outlook on to trees and tulip beds in the Square.

It should be pointed out at this juncture that there are two hospitals in Amsterdam, a new and an old, the former of which is ultimately to replace the old hospital as funds permit. The hospitals are financed by the municipality, which is in common with most of the Dutch towns on the verge of bankruptcy. It is, apparently, an international phenomenon that the hospitals are the first to suffer under conditions of financial depression, whether they are State-supported or not. Work has been at a standstill in Amsterdam for two and a half years. The new surgical block built to accommodate 250 beds and finished in 1933 has been empty ever since through lack of funds to equip it. All the surgical cases are, therefore, admitted to the old hospital.

The hospital is divided into separate clinics for each branch of medicine. These are surgical, medical, V.D., neurological, etc., and each has at its head a professor who is responsible for the working of his clinic. He is assisted by a staff of doctors and students in roughly a similar way to the English system.

Our first lecture took place an hour and a half after we arrived in the town. It was given at the bio-chemical laboratory by Professor Jansen on the subject of Vitamins. He described to us the research into the nature of vitamin B_2 and the efforts which are being made to separate its various constituents. Two factors have been isolated in Germany from the vitamin B_2, one found in milk and the other in eggs. Experiments have just been started in Amsterdam on the properties of these two substances, and they have adopted a somewhat unusual experimental animal for this type of research, namely, the drosophila fly.

Professor Jansen conducted us round the laboratories, where we saw the fly in various stages of development and animation, which corresponded to the vitamin content of their food. As far as a superficial inspection could show, the flies seemed a convenient stock for the preliminary work in vitamin research, since they are easy to keep in large numbers and results can be obtained in a short time. Confirmatory experiments are done on rats and mice. We were shown rats with pellagra, both incipient and chronic. The investigations are, unfortunately, in an early stage as yet, and no positive results have yet been obtained.

The afternoon was spent at the Cancer Institute, where Professor Waterman described the hereditary influences in the production of malignant growths, a subject on which they are concentrating. The investigations were started on a strain of mouse particularly susceptible to cancer and on a pure-bred cancer-resisting strain imported from America. A particularly interesting point that was made was that in a cross between these two strains the progeny of a male of the cancer-resisting strain and of a female of the cancer-susceptible strain had a higher proportion of tumours than a cross in which the sex of the parents of each type was reversed. In other words, the female cancer-resisting mouse seemed more likely to transmit the disease than the male, if cross-bred.

Another strain of mouse was bred by selection in which all the females died of carcinoma of the breast at a maximum age of eighteen months, whereas the male members of the strain had a normal average age at death. We were then shown round the Institute, where we saw most intensive and thorough investigations in progress. Transplantations, microphotography, X-rays, cell cultures, diet experiments and even an apparatus devised to measure the minute physical dimensions of each patient from head to heel play their part in this work at the Institute. There is accommodation for about 30 patients at the Institute. The incoming patient is reassured by a series of dramatic "before and after" photographs hung on the walls in the corridors showing the cure of various malignant conditions.

Tea, which was a concession to our foreign

tastes, was provided, and afterwards a case of leukoplakia treated by epithelial grafts was demonstrated.

On Tuesday morning we were given a lecture on surgery of the stomach by Professor Noordenloos. He appeared to be more ready to operate on cases of untreated ulcer than most English surgeons. He always employs a transverse incision, which he claims gives better access to the part and suffers no disadvantages compared with the more usual vertical incision. All his operations on the stomach are done under local anæsthesia and gas. The operation he favours for these conditions is Bilroth's second method of partial gastrectomy. He also maintains that post-operative gastro-jejunal ulcers are not common experience. His treatment of these is removal of the anastomosis and post-operative feeding by a jejunal tube for at least a fortnight. Unfortunately, we were unable to see an operation performed. He showed us three cases on which he had operated five days previously for gastric ulcer, which had made a good recovery. Each of them had formed clean firm scars which seemed to interfere very little with the function of the rectus muscle.

The rest of the morning was spent in the pathology department of the hospital. This was housed in a separate new building built on a most generous scale. Unfortunately, we caught the Professor unawares, since he was expecting us the following day and was unable to find at such short notice the most prized specimens which he had hoped to show. This did not detract from the interest of the visit, because the building was so lavishly equipped. Nobody had seen a pathology department with a marble staircase panelled with walnut, with oak floors, with a mortuary chapel that was a cathedral in miniature, with a preservation room to hold twenty bodies, and, above all, with a lecture theatre with concealed lighting, and film projection room on the lines of a modern luxury cinema. In other parts of the building there were laboratories, and a dark room which, we were informed, was "so dark that there was nothing to see." Two or three of the party seemed to disbelieve this and ventured inside, and confirmed what the Professor had said by having considerable difficulty in finding their way out again.

In the afternoon a clinical demonstration was given in the medical department by Dr. Groown. This cannot be described without first paying a tribute to the remarkable fluency of the doctor's English. In fact, he showed a command both of technical and idiomatic expressions that would put to shame many lecturers that are heard in England.

The first case he showed us was a man aged 62. He had lost weight and appetite, he had a distended abdomen, petechial hæmorrhages, hard glands in the neck and a secondary deposit in the umbilicus. His liver was palpable and several hard raised areas could be felt on it. There was no blood in his stools, and no direct evidence of carcinoma of his stomach. The interest lay in the diagnosis, which was finally decided, after careful exclusion of other sites and with due consideration of the signs and symptoms, to be a primary carcinoma of the liver, following alcoholic cirrhosis.

A second case in which the interest lay in the diagnosis, also because of its rarity, was a man, aged 49, who had a very large spleen and an enlarged hard liver. There were areas of a leaden pigmented character over his arms and legs. A diagnosis of hæmochromatosis was made, but it was found that the condition had persisted for 25 years or more, that there was no glycosuria, the blood sugar was normal, and, in addition, the patient's blood picture showed a leucopenia with the presence of large mononuclear cells of an epithelial type. The diagnosis was thereupon changed to one of Gaucher's disease, and Dr. Groown endeavoured to get it confirmed by several dermatologists of great experience, none of whom, however, had ever seen a case. Eventually, he called in a very old dermatologist, who thought he had seen one case. In order to make certain he referred to his case notes, and found that both cases were one and the same, he having made the diagnosis some twenty years previously. Other cases which were demonstrated were thromobocytopenia, hæmophilia and aplastic anæmia.

On Wednesday morning most of us felt in need of the break in the programme which had been arranged for us, so that we could see in daylight those parts of the town which did not lie on our route to and from the hospital. This was all too short a time to get any comprehensive idea of the city, and we postponed the larger part of the town until Friday, when the whole day was available.

In the afternoon Professor Noordenboos gave an instructive demonstration of some of his cases. Included among these were a dislocation of the humerus, which was eventually repaired by means of a bone graft in front of the joint, coxa vara, a case of von Recklinghausen's disease with a fracture of the upper end of the femur, also treated with a bone graft, and a tumour of the tibia which was first diagnosed as a chondroma, but which afterwards turned malignant. The most striking

case because of the operative procedure involved was a case of osteogenesis imperfecta, an hereditary condition in which the patient had noticeably blue sclerotics, a pear-shaped face, and bones which were extremely brittle, thus completing the syndrome. She was a woman, aged 23, who, some six months previously, had fractured her patella from a trivial blow. It healed up, but her knee joint became completely disorganised and ultimately the bony points to which the ligaments of the joint are attached broke away, so that the tibia was completely separated from the femur.

In order to make something approaching a workable joint, Professor Noordenboos drilled a hole upwards and backwards from just below the tuberosity of the tibia, which emerged between the articular surfaces. He drilled another hole through the centre of the patella, threaded a string of fascia lata through the two holes, sutured the ends, and closed the wound. Whether the patient would receive any permanent benefit was a matter for speculation.

We paid a visit to the clinic for nervous diseases on Thursday, which was under the command of Professor Braun, who first showed us the clinic. Their most prized apparatus was the X-ray table, which, at the touch of a button, did everything but tie itself into a knot. Designed for X-raying paralysed patients, it stood itself upright and revolved on itself in a most uncanny way. Next door to the Professor's private room was the brain room, where specimens of all kinds were kept. The Professor admitted that he had to have it next door because he was temperamental, and when he wanted any particular brain he had to have it in two minutes. We were then shown a film and also given a practical demonstration of the effects of the alkaloid bulbocapnine on animals. When injected, this drug produces a state very similar to that seen in catatonic schizophrenia, in that the animal can be put into almost any position, however grotesque, and will maintain it even to the extent of resisting any attempts made to change it. As an illustration of this, a cat and a mouse were injected and placed within an inch of each other, neither of them showing the normal reaction to this juxtaposition. They were each hung upside down, laid on their backs, and put through a series of contortions in any of which they appeared completely at ease.

A rare condition named by the Professor " hemicraniosis," was also demonstrated. It consisted of multiple exostoses of the skull, each protuberance being roughly the size of a walnut. They were confined to the left side of the skull and roughly to the area supplied by the trigeminal nerve. It was a congenital condition which had caused an arrest in the man's intellectual development, but did not appear to have interfered with the length of his life, for he was 65 when he died.

In the afternoon Professor Lange, who was the only woman we met in charge of a department, conducted us round the children's wards. During the round she laid stress on the type of cry that each baby produced, claiming that she could diagnose the condition on hearing it. We saw seventy-five children during the afternoon, so that it was difficult to bring away a clear idea of the interesting cases. There were several cases of tuberculosis, which were housed in a separate ward. They make a practice in Amsterdam of finding the source from which the child contracted the disease, with the object of preventing, if possible, any further cases arising from the same contact. Two striking cases were, one of congenital opisthotonos in a child of four months and another of a child four years old in which a diagnosis of peptic ulcer had been made.

An account of the tour would be incomplete without some reference to the town itself. The first impression that everybody in the town has a bicycle is actually an under-estimate, two to an owner being quite common, and the plutocrats possess three. The traffic in general is completely berserk. Crossing the road is to the novitiate nothing short of a gamble with a particularly terrible form of death. A charge *en masse* by the cyclists with a huge American car to administer the *coup de grace* is the method of pedestrian slaughter in Holland.

The achievement of which the citizens of Amsterdam are most proud is the workmen's quarter, which has been built since the war. It consists of wide open streets with plenty of light and air, lined with modern buildings, with balconies and large windows so that there is no danger of any slum-formation here.

With regard to living expenses, nothing is cheap except taxis and cigars, but, on the other hand, there are few things that are more expensive than they are in England. Incidentally, cheese should have been mentioned as another of the cheap commodities. Anyone who likes cheese can indulge in his taste *ad nauseam*, since it is produced at every meal in generous quantities. We all left Holland suffering from a cheese phobia which amounted to an almost psychological intensity.

Before concluding we should like to thank the St. Thomas's Hospital Physical Society for giving us the opportunity of joining them in this visit. If the offer should recur, we can only say that there can be few more attractive methods of combining instruction and entertainment at a reasonable cost.

" PATER."

Puberty

A Paper read before the Guy's Hospital Physiological Society on Thursday, February 22nd, 1934, by T. H. Shire, Esq.

MR. CHAIRMAN and GENTLEMEN,—In 1635 or thereabouts Sir Thomas Browne wrote: "I hold that the Devil doth really possess some men, the Spirit of Melancholy others, the Spirit of Delusion others." Whether as good physiologists we can subscribe to this I must leave to a free vote of the Society. Personally, I am suspicious of the Devil, and I am filled with Melancholy at the meagreness of the information about Puberty; but I was never filled with delusions as to the infallibility of physiologists—"Ubi tres doctores, duae artes"—and nowhere is it more true than in this paper.

The Concise Oxford Dictionary defines puberty as "being functionally capable of procreation." Pubic hair is one of the early signs of sexual maturity in the human species, and gives its name to the onset of adolescence, which is the period between puberty and the adult state. Biologically it is of great importance, because the future of the race depends on its successful outcome. Primitive man was well aware of this, and the customs of many people still bear witness to it; around his thirteenth birthday the Jewish boy is admitted with appropriate ceremony to full membership of the Synagogue; many native tribes, the Australian aborines amongst them, perform circumcision; others set a severe ordeal with much mutilation as a condition of admittance to adult privileges.

What, then, are the signs of puberty and adolescence? Most of us should be familiar with them, at least objectively, by now. They may be grouped under three headings: Psychic changes, by which are meant changes in behaviour and mental processes; growth of the gonads; secondary sexual changes, including growth of the body with accompanying sexual differentiation.

At this period the adolescent begins to take interest in members of the opposite sex, is much subject to blushing, shows awkwardness in behaviour, and sometimes shows signs of mental instability, such as enthusiasm for strange political creeds and other psycho-neuroses. Havelock Ellis says that this is the time of greatest liability to epilepsy and religious mania. With the maturation of the genitalia the childish interest in the body's capacity for pleasure becomes directed towards those functions which best will serve the race. As recently as 1902 Henry James was able to write: "All such mental over-tensions are, when you come to the bottom of the matter, mere affairs of diathesis due to the perverted action of various glands which physiology will yet discover." Oswald had just isolated an iodine-containing protein from the thyroid gland, and with the relationship between the cretin's mind and the thyroid established, James mocked at those rash enough to foretell the control of mind by bio-chemists. He may be right, but not entirely, because many of the mental characteristics secondary to sex will be seen to be quite closely related to glandular activity.

The most important sign of approaching maturity in the female is the commencement of menstruation, growth of the breasts, widening of the pelvis, absence of hirsuties on the face, and high pitch of the voice contrast vividly with the young male. Pubic and axillary hair is common to both sexes, but the former is differently distributed in each; in the female it has an upper margin concave upwards and is confined to the pubic area, whereas the male distribution is triangular over an area which may include the umbilicus. In the male, growth of facial hair, lowered pitch of the voice, and increased sexual desire are the adolescent signs. It has been observed in America that the rate of skeletal growth increases up to puberty, which is at the age of twelve to thirteen in girls and fourteen to fifteen in boys; from then until maturity, which is at twenty to twenty-two in women and twenty-three to twenty-five in men, the rate falls to zero with the calcification of the epiphyseal cartilages.

In any theory of the cause of onset of puberty, in addition to accounting for psychic and mental changes, account must be given of the change in rate of skeletal growth, differentiation between the sexes in voice and skeleton, growth of pubic and axillary hair, and in the female the onset of menstruation and growth of the breasts; it should also explain that adiposity which is described as "feminine curves" and is certainly a secondary female character. In some boys of this age there is slight painfulness of the breasts: is this to be associated in any way with the same phenomenon in girls? Further must be considered the common observation that the thyroid is enlarged at puberty. It also enlarges in women at the menses and during periods of sexual excitement; this last has given rise to an old French marriage custom still observed amongst the peasants of southern France—on her wedding night the bride's throat is tied with a thread and this must be broken by the

morning, in order that good augury for the future of the marriage may be entertained.

The connection between normal function and glandular secretion was first demonstrated in the case of the thyroid, when a case of myxœdema was cured by feeding with the desiccated gland. This has led to experimental work on other glands carried out along constant lines, namely: Firstly, partial and complete extirpation of the gland to show the effects of hypo-function followed by attempts at, secondly, replacement, either by oral administration or injection of extracts, to demonstrate the existence of a specific hormone; and thirdly, administration of the gland to the intact animal to study the effect of hyper-function. This evidence is compared with clinical findings. The association of certain symptoms with a constant post-mortem finding is termed a "syndrome," and there are a number of glandular syndromes which affect the sex function, such as lesions of the gonads, pineal, adrenal, thyroid and pituitary and disease affecting the thymus. Each of these glands will be considered in turn.

Of the thymus little is known. As a rule it increases in size from birth to puberty, and then atrophies slowly until it disappears.

Ablation experiments in animals have no effect on their sexual function; the relation of the thymus to other glands is indicated by its enlargement in acromegaly, exophthalmic goitre and in eunuchs; as sexual hypo-function is common to these conditions, we may conclude that its disappearance at puberty is due to the activity of the sexual glands. Asher has extracted a sulphur-containing polypeptide from calves' thymus which produced abnormal skeletal and gonadal growth; Gudernatsch, after examination of the available evidence, believes it to be associated with pre-pubertal growth; while Weil says: "The thymus is the gland of growth in childhood, and together with the hypophysis it produces bone-growth in epiphyseal junctions, while the thyroid and parathyroid aid bone-building by calcification." With these somewhat conflicting views we must leave the thymus.

The pineal is of interest only because of the existence of a rare condition in young boys who show abnormal skeletal growth, precocious sexual development and the signs of a brain tumour. The tumour is of the pineal and suggests from its histological appearance hyper-function of the gland.

The adrenal gland morphologically and functionally consists of two portions, the cortex and medulla; we are only concerned with the cortex in this paper. Tumour of the cortex, indicating hyper-function of the gland, produces precocious sexual development—a case is recorded of a girl menstruating at the age of two; boys grow abnormally large with large sex organs, a condition known as the "Infant Hercules." Adult females with this tumour are remarkable for the loss of female sex characteristics—menstruation ceases, they show male distribution of the pubic hair, grow a beard, the voice deepens to resemble the masculine voice, and gross enough enlargement of the clitoris occurs for it to resemble a penis. Cases of cure by removal of the tumour are known. Adrenalectomy in cats and dogs is usually followed by death, but Swingle and Pfiffner have prepared an extract which keeps these animals alive after operation; this extract produces sexual precocity in female, but not in male, rats, and is accompanied by hypertrophy of the anterior pituitary. Britton considers the effect to be due to stimulation of the anterior pituitary, which influences the ovaries to show early maturation. The cortex has been associated with cholesterol metabolism, which will be referred to later.

It has been mentioned already that the thyroid enlarges at puberty; it does so also during pregnancy and menstruation. Topper and Mulier made a study of the basal metabolic rate in New York school children between the ages of ten and sixteen. They found in the pre-pubescent period that the B.M.R. slowly increases to a maximum which coincides with onset of menstruation in the girls and sex maturity in the boys; symptoms suggestive of Grave's disease appear—tremor, tachycardia and nervousness; as adolescence progresses the B.M.R. falls, the thyroid resumes its normal size and the symptoms disappear. This hyper-function of the thyroid most probably accounts for blushing and other nervous manifestations of puberty.

Hypo-thyroid disease before puberty produces cretinism and, when mature, myxœdema. In both these conditions sex function and mental activity are seriously impaired; in addition, cretins show greatly retarded growth.

In tadpoles Gudernatsch observed that thyroid feeding precipitated metamorphosis into frogs independently of their age—very young tadpoles were changed into miniature frogs; iodine added to their water had a similar but less striking effect; thyroidectomised tadpoles failed altogether to metamorphose and grew into giant tadpoles. Evidently metamorphosis is dependent on the iodine content of the surroundings, and until the thyroid has accumulated sufficient iodine the tadpoles are unable to mature. The Mexican axolotl is an animal in which the thyroid has become quite functionless, but thyroid feeding converts it into the salamander Amblystoma.

The thyroid gland is essential for pubertal changes, but does it initiate puberty? Or is it activitated by some other organ so as to supply the increased energy demands of the rapidly maturing organism?

The testis and the ovary are each in their own sphere directly responsible for the development of secondary characters appropriate to the sex. The effects of pre-pubertal castration in the male has been most recently observed in the Skopecs, a Russian religious sect who castrate boys under ten years of age. In these people the voice remains infantile, which is in agreement with the mediæval practice of castrating choir boys; the penis, prostate and seminal vesicles remain small, the distribution of pubic hair becomes feminine and beards are absent; the long bones grow disproportionately, so that these people are tall with short trunks, but obesity is not an invariable accompaniment. After puberty, obesity, an apathetic mentality, and loss of sexual power are the chief symptoms, while regression of voice and loss of male hirsuties do not occur. Voronoff has tried the effect of grafting testicular tissue in male subjects; Steinach ligatured the vas deferens and showed that the spermatogenic tubules degenerated while the interstitial cells remained unchanged; both must be mentioned, but their results are of doubtful value and unconfirmed. Korenchewsky has injected an extract of bull's testes into castrated rats and finds regeneration of the prostate and seminal vesicles; this has been confirmed by comparable work on guinea-pigs and castrated fowls—the last-named grow a male coxcomb; regeneration of thumb-pads in castrated frogs has also been successfully accomplished. There is thus evidence for the existence of a male sex-hormone.

In the female the relation between hormone secretion, menstruation and pregnancy is the field of innumerable researches. The rapid advance is largely due to the correlation, by Stockard and Papanicolaou in 1916, of the œstrus or sexual cycle in animals with the condition of the vaginal mucosa—it is described as the "vaginal smear" test and gives an easy method of estimating the potency of female endocrine extracts. The effects of bilateral ovariectomy on pre-pubertal females is followed by failure to menstruate or develop breasts. After puberty there is atrophy of all the sexual organs, cessation of menstruation, lowered B.M.R., and a tendency to obesity. In 1930, Thorek transplanted a human ovary into a castrated female monkey and restored the menstrual cycle; Steinach has induced growth of breasts by ovarian grafts into castrated guinea-pigs. We can see that there is evidence for the existence of an ovarian hormone which is responsible for the development of secondary sexual characteristics in the female. This is confirmed by Allen and Doisy, who in 1923 induced œstrus in castrated animals by injection of an ether-acetone extract of liquor folliculi aspirated from hog's ovaries. The extract has been given a great many names, such as œstrin, theelin, etc., but recently Butenandt (1929) prepared an active crystalline body, which he calls "keto-hydroxy-œstrin," and its chemical formula is well on the way to being established; the importance of this cannot be exaggerated, because chemical bodies of the phenanthrene series, to which Butenandt's formula is related, have been shown by Dodds and Hewitt to induce mild œstrus in rats. The formula shows also a relation to cholic acid and cholesterol; I mentioned that the adrenal cortex gives evidence of association with cholesterol metabolism—it would not be too wild a speculation, in my opinion, if we suggest a relationship between this and the sexual dysfunction shown in tumours of the adrenal cortex; there is certainly here a field for investigation.

The pituitary gland enlarges at the menses and at puberty. Our present knowledge of it is largely due to Harvey Cushing, of Boston, Mass. He has combined clinical work with laboratory research in a remarkable manner, and he has provided the impetus for investigations in this field. The anterior lobe of the gland concerns us here as it is shown to possess marked influence on skeletal growth and sexual phenomena. It must be borne in mind that there are three types of cell in this gland, the acidophil, the basophil and the chromophobe cells; the evidence for pituitary function indicates that the acidophil cells are concerned with a growth hormone, the basophil cells with a sex-maturing hormone, while no function is as yet assigned to the chromophobe cells.

First we shall consider the clinical evidence. Simmonds' disease is a condition which at autopsy shows complete disappearance of the gland and its replacement by scar tissue; the symptoms are loss of sexual power, loss of pubic and axillary hair, premature senility and great weakness.

Gigantism occurs when there is acidophil-cell hyperplasia of the pituitary before the completion of adolescence, *i.e.*, before the calcification of the epiphyseal cartilages. Such cases are hypo-sexual, show an enlarged sella turcica by X-ray, and abnormal bone-growth; Cushing records a case of a man 8 feet 3 inches high who weighed 19 stone 9 lb.; Engelbach had a boy of thirteen who was 7 feet 3 inches and weighed 18 stone. When these adenomatous tumours occur in the adult, the bones cannot grow in length, but osteal

accretion occurs at the extremities and the condition is then described as acromegaly.

Cushing describes a syndrome to which his name has been given; at autopsy an adenoma of the basophil cells is found and during life female cases are extremely hirsute and adipose, cease menstruating, show osteoporosis, pigmentation and an increased B.M.R.; males are impotent. The thyroid, para-thyroid and adrenal glands are not markedly enlarged, but Cushing suggests that the pituitary tumour stimulates hyper-activity of these glands, a view confirmed by Collip, whose work will be mentioned later. Tumours of the chromophobe cells depress the functions of the other cells by pressure, with resultant sexual impotence and lowered B.M.R.

Hypo-function of the pituitary sometimes causes infantilism; the Lorrain-Levi syndrome presents a mentally normal individual in whom lack of growth- and sex-maturing hormones has produced a shapely but under-sexed dwarf; successful treatment of such cases by feeding with ox-pituitary is sometimes reported. A number of similar diseases are described, including one in which great obesity is found to accompany sexual immaturity—Pickwick's "fat boy" was probably such a case, which Fröhlich calls dystrophia adiposo-genitalis. The obesity in these pituitary cases is possibly due to involvement of the hypothalamus.

From the clinical findings it is seen that a fair case can be made out for the functions ascribed to the pituitary. We shall now consider some experimental work. In 1907 Paulesco removed the pituitary from dogs and produced a condition of weakness and impotence comparable with the clinical condition in Simmonds' disease, but extirpation experiments always led to early death. Partial extirpation of the gland in immature animals shows in a striking manner a picture of hypo-function of the gland, viz., epiphyses fail to join, the thymus persists, the B.M.R. falls, and sexual maturity is much retarded. All experimenters comment on the atrophy of the gonads. In 1916, Smith and Allen removed the pituitary from tadpoles 3-4 mm. long; they failed to metamorphose even when fed on thyroid, but pituitary grafts restored them to a normal condition and metamorphosis now took place.

In 1921 Evans and Long produced in rats experimental gigantism by intra-peritoneal injection of an alkaline extract of pituitary. In 1926, Smith and Engle and Zondek and Ascheim, working independently, grafted pituitary gland into immature female rats with the formation of an enormously enlarged ovary, accelerated ovulation, and the early onset of œstrus; insemination of these animals produced "super-fœtation" so that the ova were evidently physiologically perfect. But both sets of workers found that removal of the ovary followed by pituitary implants failed to produce signs of œstrus. Here is evidence that the menstrual cycle is related to both pituitary and ovary; in fact, Zondek describes the pituitary as being "motor to the ovary." The different result obtained by Evans and Long was now shown to be due to the method of extraction of the gland—acid extraction gives a sex-maturing hormone, while the original alkaline extract only contains a growth hormone. Cushing experimented on bull-dogs with this last extract, and produced a perfect picture of canine acromegaly.

At the same time, in 1926, Zondek and Ascheim, in looking for sources of sex hormone isolated from the urine of pregnant women a sex-maturing hormone which they called "prolan," and which was present in relatively large amounts. This they made the basis of their famous "pregnancy test," and they believed that anterior pituitary hormone was identical with prolan, but certain differences in its action were detected, *e.g.*, anterior pituitary hormone produces lactation, while prolan only induces maturation of the breasts without lactation. This led to the isolation of "prolactin" from the pituitary; as this is a protein, it is not excreted by the kidney, and is therefore absent from urine of pregnancy.

Collip has developed a special technique for pituitary operations on rats and his work is the most up to date. In 1933 he reports that hypophysectomy in rats leads to atrophy of the genitalia, adrenals and thyroid, with osteoporosis and cessation of growth. He calls prolan the anterior pituitary-like substance, and finds that injection of it into pre-pubescent rats, six to nine days old, produces no œstrus, whereas after puberty, over fourteen days old, these animals are in œstrus for as long as six weeks. He finds also that the anterior pituitary is essential for the Zondek-Ascheim test, and concludes that the pituitary supplies a complementary substance which only appears at puberty. Grafts of pituitary restore the hypophysectomised rats to normal with restoration of thyroid, adrenals and gonads to a normal condition. But the most interesting result is his separation of a thyrotropic hormone which prevents regression of the thyroid in hypophysectomised animals. He observes that the growth—or Q—hormone, as he calls it, reduces the nitrogen excretion, so that it has some action on nitrogen metabolism; as osteoporosis is improved there must also be an action on the calcium balance, but the para-thyroid function is not involved. For maturity both complementary hormone and prolan are

essential, and prolan may or may not be the same as the sex-maturing hormone of anterior pituitary. The proof must be chemical because, although they are similar, the placenta, which secretes prolan, may have affected its constitution.

We must not omit to mention that, after puberty, rats develop a metabolic mechanism which enables them to live without the essential amino-acid lysine; whereas, before puberty, feeding experiments with gliadin from wheat, which is lysine-free, retards their growth. Feeding experiments also show that vitamin A is necessary for normal sexual maturation, and vitamin E for normal fertility in rats. Temperature is a factor affecting the rate of chemical reaction; as chemical action plays such an important part in vital processes, we should expect temperature to influence the rate of maturation; this is seen in the earlier age of menstruation in tropical countries as compared with colder climates, but here a racial factor plays a part, for in Japan the average age of onset of menstruation in different race groups is found to vary, although the climatic conditions are constant.

Early in the paper I mentioned the psychic phenomena of adolescence. Unfortunately, they are outside the range of our physiological studies, and I know nothing about their significance. That they cannot be due to hormone influence alone is shown by such phenomena as phantom-tumour, hysterical paralysis and psychic inhibition of menstruation in unmarried young women who fear they are pregnant. On the other hand, we have noticed in many instances a relation between mental activity and glandular function. The interpretation of these conflicting ideas is to me comparable with the conundrum as to whether the egg or the chicken came first.

It seems to me that the pituitary is the "master gland" which increases its function with growth during childhood to some level at which action on the gonads, thyroid, and other glands results in the many manifestations of puberty; it is as if the gonads need a certain concentration of anterior pituitary hormone before they will condescend to behave as mature organs. The pituitary controls the gonads, the adrenal cortex, the mammary glands and the thyroid as we have seen; that it does not go on increasing its influence throughout life is probably due to the antagonism of the gonadal hormone, for gonadectomised rats show enlargement of the pituitary.

Of course, it is rash to present a theory of endocrine relationship in the present state of our knowledge, but to those who feel strongly in the matter I address the words of Sir Thomas Browne: "A good cause needs not to be patron'd by passion, but can sustain itself upon a temperate division."

Review

A Handbook of Midwifery. By Sir COMYNS BERKELEY, M.D., F.R.C.P., F.R.C.S., F.C.O.G. Published by Messrs. Cassell & Co. Ninth Edition. 8*s*.

THIS book, without descending to the telegraphic style of the synopsis, covers a great deal of ground in a short space, for, though it has upwards of 680 pages, these are small and the print is large. It is a work intended for obstetric dressers, midwives and pupil midwives, and it stays at a strictly practical level without soaring into the more abstruse realms of theory; and the descriptions of the major disorders of pregnancy consist of the symptoms and signs with small reference to the pathology, and the treatment is divided into that to be performed by the nurse and that to be performed by the doctor.

There is, apart from the usual matter contained in text-books, a section on bacterial infection and immunity, and others on the preparation of patients for operation, health and hygiene in the home, and the use of drugs.

Considering the price of the book the illustrations are numerous and surprisingly good. At 8s. it should be a good investment for those about to commune with Queen Victoria, and a book that can be recommended to every midwife.

Sport

Swimming Club

Guy's v. Greenwich S.C.

GUY'S sent down a weak team to play Greenwich on Monday, June 3rd, and, after a hard-fought game, were fortunate to force a draw.

Greenwich scored first from a break-away in the shallow end. Some five minutes later McCall equalised for the Hospital, and at half-time the score was one goal each. Soon after the interval Greenwich attacked again and scored two goals in quick succession, but the Hospital warmed to their work, and Smit and Weston scored, the latter just before full time.

Result.—Drew, 3—3.

Team.—J. Crane; A. M. McCall, C. Halamandres; J. A. R. Smit; T. L. Weston, J. Bulstrode, A. J. Drew.

Lawn Tennis

Guy's Mixed American Tournament

THE weather was very kind to us on Saturday, for whereas the City and, indeed, most of London experienced a thunderstorm and deluges of rain, play at Honor Oak Park was only briefly interrupted. There was a spirit of gaiety in the air, and in some games it appeared that the extent of enjoyment was in an inverse ratio to the quality of the tennis—the more egregious the error the louder was the laughter. Some players invited good-humoured "ragging," and were readily subjected to it.

Almost inevitably the number of girls lacking partners and men with the same need were unequal, and certain lucky young men were privileged to support two partners and compete in different sections of the draw.

It is impossible to praise the catering too highly; not only were the ". . . cakes and dainties (and goodies? Ed.)" most alluring and seemingly inexhaustible, but the charm with which they were served tempted many to neglect the tennis.

The tennis, as a whole, was more enjoyable to the player than to the spectator, but the final matches in the knockout tournament for the winners of the various sections were of a very high standard. The winners of the first prizes, F. J. Piercy and Miss J. Notley, gave a delightful exposition of the art of mixed doubles. Piercy's powerful left-handed service and strong forehand were a perfect complement to his partner's accuracy. They did not, however, win their match in the final against Dr. R. S. Bruce-Pearson and Miss Birch without considerable effort. For Miss Birch one has nothing but praise. She faced the big guns of the opposition with commendable courage, and her volleys displayed an excellent touch. Dr. Bruce-Pearson showed us a fine range of strokes, and made grand use of his reach to support his partner.

Piercy and Miss Notley gained a lead of two games before Miss Birch was successful with her service. Thereafter each game was a struggle, and only the greater experience of each other's play, and of match tactics, possessed by the couple who hold the Junior Championship of Middlesex prevailed by six games to three. The match was efficiently and audibly umpired by Dr. J. E. Giesen.

Mrs. Ryffel, whose kindness and energy had done much to produce the general feeling of enjoyment, then presented the prizes. The first prizes went to F. J. Piercy and Miss J. Notley; the second to Dr. R. S. Bruce-Pearson and Miss Birch; while the third prizes were won by Mr. Plant and Miss Evans, who were semi-finalists in the knock-out competition, and defeated the other losing semi-finalists to secure them.

The courts were in excellent condition, and Kirby is to be congratulated on his care of them.

The Lawn Tennis Club

The Committee of the Guy's American Tournament announce that the tournament realised a little over £30, which is to be paid to the Ladies' Association.

Guy's v. Sydenham L.T.C.

ON Saturday, June 29th, Guy's played a match against the Sydenham Lawn Tennis Club at Honor Oak Park. The visitors were at full strength, whereas only three members of Guy's first team were available. A close match was lost by six matches to three.

Sydenham's first team included Mr. G. O. Slade, K.C., and Mr. R. F. Hammer, who played better and more aggressive tennis with his one arm than most people with two. They started very strongly against Guy's first pair, F. J. Piercy and E. P. O. Watson, and soon annexed an easy set. They reacted, however, and did not show the same form in the next two sets. Sydenham's other two pairs were little, if at all, weaker than their first, and won their matches to give the visitors a lead of two matches to one. This was increased to a lead of four matches to two by tea-time, an interval which was a "life-saver" in the heat of Saturday.

The unusual case of two "south-paws" playing together was discovered in the Sydenham's third couple, D. Bowditch and C. M. Reid. In all, five "left-handers" took part in the match.

The level nature of the visitors' pairs is apparent from the scores:—

G. O. Slade and R. F. Hammer—
Lost to F. J. Piercy and E. P. O. Watson, 6—1, 2—6, 4—6.
Beat C. A. Boucher and R. L. V. Henderson, 6—3, 7—5.
Beat J. Archer and W. B. Southwell, 6—4, 9—7.

N. Faulks and D. E. Smith—
Lost to Piercy and Watson, 4—6, 6—4, 4—6.
Beat Boucher and Henderson, 6—1, 6—4.
Beat Archer and Southwell, 6—4, 6—1.

D. Bowditch and G. M. Reid—
Lost to Piercy and Watson, 4—6, 7—5, 3—6.
Beat Boucher and Henderson, 6—4, 6—1.
Beat Archer and Southwell, 6—2, 6—2.

Cricket

Guy's 2nd XI v. Crofton Park 2nd XI

ON Wednesday, June 4th, the Hospital 2nd XI with a depleted side beat Crofton Park at Honor Oak Park by four wickets. Crofton Park batted first, and against the bowling of W. Wylde and H. Jones-Lewis were all out for 135. Guy's knocked the runs off for the loss of six wickets, H. Jones-Lewis making a very good 49 and was unlucky to miss his 50 by one run. F. Walt and D. W. A. Drew also batted well.

Scores.—Crofton Park, 135 (W. Wylde, 3 for 26; H. Jones-Lewis, 4 for 28).

Guy's 2nd XI

D. A. Priestley, b. Twohy	8
F. Walt, c. Sprigings, b. Rowlands	21
H. Jones-Lewis, c. and b. Stewart	49
A. E. Moore, c. Stewart, b. Dutton	6
D. W. A. Drew, not out	24
A. M. Platt, c. Parkinson, b. Stewart	3
F. N. Glover, l.b.w., b. Dutton	5
W. L. Trick, not out	6
Extras	18
Total for 6 wickets	140

W. J. R. Cole-Morgan, W. Wylde, J. Warner —did not bat.

Golf

Guy's v. Hastings and St. Leonard's Medico-Dentals

THIS match, which is one of our best fixtures and was played at St. Leonard's on Sunday, June 16th, was a very good game and thoroughly enjoyed by all taking part. Guy's were unlucky to lose after establishing a useful lead in the singles played before lunch.

SINGLES

Guy's		*Hastings and St. Leonard's Med.-Dentals.*	
B. Reed	1	H. Lee	0
I. Drybrough-Smith	1	A. H. Grace	0
B. J. Doran	0	A. Kelt	1
A. E. Parrott	0	J. Bell	1
P. E. Deverall	0	T. Ward	1
R. Penny	1	I. Chisholm	0
S. Dismorr	1	H. Chapple	0
P. Spooner	1	T. Marsh	0
P. Wilson	1	L. Hibbins	0
P. Crampton	0	J. Button	1
Total	6	Total	4

FOUR-BALL FOURSOMES

B. Reed, I. Drybrough-Smith	1	H. Lee, A. H. Grace	0
F. I. Evans, B. J. Doran	0	A. Kelt, T. Ward	1
A. E. Parrott, P. E. Deverall	0	J. Bell, H. Chapple	1
S. Dismorr, P. Spooner	0	I. Chisholm, R. Penny	1
P. Wilson, P. Crampton	0	T. Marsh, L. Hibbins	1
Total	7	Total	8

Result.—Lost, 7—8.

Guy's v. Sidcup Golf Club

THIS match was played at Sidcup on Wednesday, 19th June. The result was an easy win for the home club, who were represented by a strong side.

Guy's		*Sidcup G.C.*	
P. Hanbury	½	A. M. Johnston	½
I. Drybrough-Smith	½	N. D. Bond	½
A. E. Parrott	0	B. Armstrong	1
P. E. Deverall	0	C. M. Boughton	1
D. P. Stevenson	0	F. Lawrence	1
P. Spooner	0	T. T. Stratford	1
P. Wilson	0	Lt.-Col. Stewart	1
R. Gilbert Harris	0	D. McTowan	1
Total	1	Total	7

Result.—Lost, 1—7.

Golfing Society News

THE Golfing Society have made a very bad start this year, having been unable to win a single match so far. There is a complete lack of new blood, and some of the junior members of the society of whom great things were expected have not lived up to their promising form. Final examinations have also proved a great bogey to us this year, preventing such members of the team as A. L. Young, B. J. Doran and H. B. Thornton from making regular appearances.

Fortunately, the Inter-Hospitals' Cup matches do not begin until November, and by that time we hope some of our members will have taken all the opportunities offered by the long summer evenings to put in some intensive practice, so that when we meet St. Thomas's, who are our greatest rivals for the Golf Cup, we may avenge our defeat in the semi-final round of last year.

Musical and Operatic Society's Concert

ON Thursday, June 20th, an orchestral concert was given by the orchestra of the Musical and Operatic Society in the Physiology Theatre. A criticism of the programme appears elsewhere in this issue. The object of these concerts is primarily to stimulate a genuine regard for music, and efforts made by the promoters must not be looked upon as merely another means of dragging money from the pockets of the Staff and students of the Hospital. Of course, these concerts cost quite a lot of money to put on, but good attendance will be adequate to cover expenditure, and to help the Society out of the financial doldrums into which it has drifted in recent years.

At the concert on June 20th, there was an audience of about 160 people present, and it must be admitted that, owing to an unfortunate clashing of dates, many people were unavoidably unable to be present, but it is certain that many others hesitated to come, being under the impression that their attendance would involve the risk of their spending a rather trying evening from an artistic point of view. We would like to say here that all who were present were genuinely taken by surprise, and that even the most critical were enthusiastic. The orchestra consisted of 34 instrumentalists, of whom nine only were professional musicians; the expense of their engagement was considered by the organisers to be fully justified, giving the amateurs the stability they otherwise lack.

It is felt that future concerts will be entertainments worthy of the attention of all who are interested in music, and we would respectfully ask those people to come to our next venture and see for themselves that this is so. We would be grateful, too, if those who enjoyed the performance on June 20th would help us to convince those sceptics who stayed away that these concerts really are worth while.

Preliminary arrangements for the next concert are being made, but all we can say at this juncture is that it will be given towards the middle of October, and that the programme will include Goldmark's overture "Sakuntala," the Second (*Andante Cantabile*) Movement from Tschaikowsky's Fifth Symphony, Mendelssohn's Violin Concerto, and excerpts from Sir Edward Elgar's "Wand of Youth" Suite.

R. G. S.
W. H. C.

GREAT praise is due to all those concerned with the arranging of the Society's first orchestral concert, which was held in the Physiology Theatre on June 20th.

Not only were the items suitably arranged to suit all tastes, but they were performed in a masterly manner.

The musical standard attained by this orchestra was the outstanding feature of the evening, for the ability of the players was subjected to increasingly difficult tasks as the concert proceeded.

In the first half of the programme, the first movement of Schubert's Unfinished Symphony was rendered with apparent ease and with particularly good phrasing, the effect of which was indicative of the players being in thorough understanding and sympathy with the very fine melodies which this movement offers.

It was in the second part of the concert, however, that the orchestra was subjected to the real test. This was afforded by the Grieg Pianoforte Concerto in A minor. Miss Kathleen Cheeseman proved to be a very able pianist. Her playing was clear and interpretation excellent, thus earning for her the enthusiastic applause she deserved.

The other artist of the evening was Miss Frida Gabell, who sang songs from well-known operas. She was accompanied by Miss Nancy Weir. Miss Gabell's last encore entitled, "A Medley of Strauss Songs," proved so popular that she was prevailed upon to repeat the last verse ("Come, come, I love you only"), in which she invited the audience to join.

Judging from the first concert the standard of performance promises to be even better as time goes on, but there is still room for more first and second violins, as the brass wind tends to be rather overbearing, particularly in the *forte* passages. It is to be hoped that more members of the Hospital who have violins and can play them will make a point of joining the orchestra. They will never regret it, for the experience to be gained is invaluable, particularly under such an able conductor as Mr. R. G. Siggers.

T. S. L.

Guy's Hospital Gazette
(ESTABLISHED 1872)

A Journal of Hospital News, Medicine, Surgery and Dentistry

Published on alternate Saturdays. Price 9d.

Hospital Information, etc.

Notice

Primary Fellowship Course

A Combined Course in Advanced Anatomy and in Advanced Physiology will be held in common with St. Bartholomew's Hospital Medical College and St. Thomas's Hospital Medical School, during the Autumn of 1935, and, in order to restrict the size of the classes to manageable proportions, only Students and Post-graduates of the Schools concerned will be admitted.

The Classes will meet as follows :—

St. Thomas's Hospital.—September 16th to October 4th inclusive, on Mondays, Wednesdays and Fridays. Physiology, 2 p.m. to 3 p.m.; Anatomy, 3 p.m. to 4.30 p.m.

Guy's Hospital.—October 7th to October 25th inclusive, on Mondays, Wednesdays and Fridays. Anatomy, 2 p.m. to 3.30 p.m.; Physiology, 3.30 p.m. to 4.30 p.m.

St. Bartholomew's Hospital.—October 28th to November 15th inclusive, on Mondays, Wednesdays and Fridays. Anatomy, 2 p.m. to 3.30 p.m.; Physiology, 3.30 p.m. to 4.30 p.m.

Further details may be obtained from the Medical School Office. Guy's men wishing to join the Course should send in their names to the Dean.

T. B. JOHNSTON,
Dean.

Pass List

ROYAL COLLEGE OF SURGEONS OF ENGLAND

May, 1935.

FINAL, F.R.C.S.

J. A. Cholmeley
W. C. Barber
I. G. Robin
J. C. Balzer
C. R. Lambert
H. S. Morton
W. F. Nicholson
S. H. Wass
F. D. Burke
R. Strang

UNIVERSITY OF CAMBRIDGE.

THIRD EXAMINATION FOR MEDICAL AND SURGICAL DEGREES.

PART II.

Easter Term, 1935.

Principles and Practice of Physic, Pathology and Pharmacology.

D. P. King.

PART I.

Surgery, Midwifery and Gynæcology.

R. A. Andrews
G. R. Barbour
A. S. Bookless

SOCIETY OF APOTHECARIES OF LONDON.

FINAL EXAMINATION.

June, 1935.

Medicine.

S. E. Osborne.

Forensic Medicine.

S. E. Osborne

TREASURER'S GOLD MEDAL AND PRIZE IN CLINICAL MEDICINE.

P. W. Clarkson.

Papers by Guy's Men

Arthur F. Hurst. The unhappy colon. *Lancet*, 1935, i, 1483.

C. Worster-Drought. Congenital motor asphasia. *Proc. Roy. Soc. Med.*, 1935, xxviii, 1077 (Sect. Neurology).

Maurice Campbell. Treatment of pericarditis. *Brit. Med. Jour.*, 1935, i, 1231.

Geoffrey Rake and Another. Studies on meningococcus infection: VIII—The Type I specific substances. *Jour. Exp. Med.*, 1935, lxi, 753.

M. Mitman and Another. The Drinker respirator in diphtheria, etc. *Lancet*, 1935, i, 1438.

Frank Marsh. A case of "botryomycosis." *Lancet*, 1935, i, 1443.

Appointments

Douglas Wain, O.B.E., L.D.S.(Eng.), to be Honorary Dental Surgeon to the Christie Hospital and Holt Radium Institute, Manchester.

Alan H. Todd, M.S., F.R.C.S., to be Hon. Orthopædic Surgeon, Purley and District War Memorial Hospital.

Changes of Address

A. D. Marston, 80, Harley House, N.W.1. *Welbeck* 6170.

R. A. Ratcliff, Western Elms Lodge, Reading.

Births

SCHOLEFIELD.—On June 22nd, 1935, to Queenie (née Dean), wife of Bernard Scholefield, F.R.C.S., Wargrave House, Hereford—a daughter.

RUTTER.—On June 22nd, 1935, at 9, Hilltop Road, West Hampstead, N.W.6, to Gladys, wife of C. Rutter, M.R.C.S., L.R.C.P.—a daughter.

FAIRFAX.—On June 21st, 1935, to Hildegard, wife of Donald Fairfax—a daughter.

EDS. { P. W. C.
M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX 20*th July* 1935 *Number* 1226

PASSIM

WHEN writing last year in these columns of the congestion so frequently present at Surgical Out-Patients we made a plea for the restoration of the Fracture Clinic. During the autumn the Committee on Fractures, appointed by the British Medical Association Council, published its report, and our Governors have recently decided that the Clinic shall be re-established at the Hospital.

The findings of the Committee have indeed provided excellent grounds for their doing so. They have shown that the economic issues involved are considerable, and the problem is one which concerns not only the individual patient but the community as a whole. Investigations into the period of disability of patients treated at organised clinics and those treated elsewhere have revealed the most striking discrepancies. A comparison between two strictly comparable series of varied fractures showed for the 276 cases not treated at organised clinics a 37 per cent. permanent disability compared with 1 per cent. for those so treated; an average period of convalescence following a Colles' fracture of 29 weeks compared with 7 weeks; a summated incapacity period of 13,000 weeks, which would have been 4,000 had the cases been under an organised clinic; and a loss of £13,000 in compensation money, which, added to the £22,000 estimated loss in wages is a further measure of the economic importance of the problem. The variations in the period of disability following fractures have been so striking that many insurance companies, whose records include varying proportions of cases treated at organised fracture services and those treated elsewhere, have themselves conducted statistical investigations into the causes of these variations. The most famous and effective of foreign fracture services, Böhler's Clinic at Vienna, owes its foundation and maintenance to such companies. They have found their expenditure well repaid; the total expenditure in 1929 for 1,800 in-patient and 7,000 out-patients was £16,000, and this sum was covered by the saving in compensation money on 124 cases of long-bone fractures alone compared to the cost of an equal number of similar cases in 1911.

The Committee are dissatisfied with the standard of treatment of fractures in Great Britain to-day. They criticise the lack of continuity of care and the inadequate supervision the majority of cases receive. The practice in some hospitals of leaving, for all practical purposes, the entire treatment of the case to the H.S., whilst under the nominal care of the chief, receives some of the notoriety it deserves. They urge the more general establishment of organised fracture services for the organisation of which they enunciate four essential principles—segregation of cases, continuity of treatment, after-care and unity of control.

The new clinic will involve changes which will make the Hospital fracture service conform more closely to these criteria. At the moment a small proportion of fractures go to the Orthopædic Department; a few which come to open operation are treated by the general surgeons; the treatment of the rest is in the hands of the two operating registrars. The after-care is conducted by the House-Surgeons of the four firms.

Under the new arrangement all cases of ambulant fractures will be treated at the Clinic. There will be attached to it a permanent Junior Staff, whose personnel shall consist of the Orthopædic Registrar, a Surgical Registrar, the Orthopædic H.S., and the Sister in charge of the Massage Department. The A.H.S. to the Senior Assistant Surgeon shall act as H.S. to the Department. Two meetings will be held each week, attended alternately by the Senior Assistant Surgeon and the Orthopædic Surgeon, who shall be in charge of the cases attending on their respective days. On a third day of the week the Surgical Registrar shall hold a meeting to deal with urgent cases, which shall be transferred on the next day to the Assistant or Orthopædic Surgeon. Cases from the

Clinic requiring admission into the wards are to be admitted under the taking-in Surgeon. All fracture cases on discharge from the wards, unless the Surgeon or Assistant Surgeon under whose care they have been wishes to continue their treatment, shall attend the Fracture Clinic.

No dramatic change in the results of fracture treatment need, or could, be expected as the establishment of the Clinic involves no alteration in the primary treatment; it is rather in the after-care, with provisions for graduated work and consequent shortening of the incapacity period, and in the increased facilities for follow-ups that improvement may be anticipated.

▭

IT is now nearly twelve months ago that the Catering Company were generous enough to vote the sum of two hundred pounds toward the building of a new squash court. There is one squash court at the Hospital, which, in the season, is booked to its utmost capacity. The court is bookable three days in advance at any time between ten o'clock in the morning until ten o'clock at night, and it is a striking testimony to the popularity of the game that, in spite of the 57 opportunities thus available for anyone wishing, on any particular morning, to book a court, great difficulty in getting a court is frequently experienced. It was therefore suggested that the fives court, a somewhat dilapidated structure no longer in its first youth, into which, in the winter months, cascades of rain and coal dust pour through the lacunae in its walls, should be converted into a standard squash court. To this the Governors (for the fives court is the property of the Hospital and not of the Medical School or Clubs' Union) agreed, provided that they did not need the space for the enlargement of the Nurses' Home—and for this the Catering Company made its generous offer. Everything therefore boded well, and hopes ran high. But there is no simplicity in such a question as the enlargement of Nurses' Homes, and, after a year's deliberations, it is apparent that the situation is little advanced, except that the odds have lengthened from about 2 to 1 on the squash court to about 5 to 1 against. It is certain that the Nurses' Home has to be enlarged; it is uncertain in which direction such expansion is likely to take place. But it seems probable that the project of another squash court is doomed, for the suggested plans show the site being gradually encroached upon by the tentacles of the octopian architect. This is particularly annoying as it seems apparent that only a few feet of the space at present occupied by the Fives Court will be needed, but it is these few feet that will render the court useless for squash racquets.

There is, of course, always the bare possibility of being able to acquire another site for the erection of an entirely new court, but the expense of this is so much greater than that of a few structural alterations in an already existent building that at the moment it seems, for financial if for no other reasons, unattainable. It is to be hoped that the Catering Company will forgive this seeming indifference to their great generosity, and we make an appeal to the Governors to consider even so trivial a claim as that which we put forward. It seems regrettable that so much needed an amenity of the Medical School should have to be abandoned for the sake of a few square feet.

"Every man's affairs, however trivial, are of importance to himself," and we ask that some effort may be made to spare the demolition of the fives court, before it is too late.

▭

THERE was the usual brilliant social function at the Tug-of-War last week, when the clemency of the weather, the magnificence of the dresses, and the unforgettable scenery of the Park combined to form a spectacle memorable for its pageanty and splendour. Among those who took parties were the Countess of Sagrada (in violet pepsac trimmed with peau d'orange), Sir Hoffman Anodyne and Lady Schulz Charlton (in scarlet and white, with muscarine sleeves, wig by Clarkson, teeth by the Dental Department, shoes, stockings, a hat and gloves), Mrs. Bordet-Gengou (black and white with yellow whoops), Mr. Anthony Boucher in a bow tie and trousers, and some patients from the Eye Wards. Mr. Davies-Colley's team defeated Mr. Slesinger's by two pulls to none, after which the Cup was presented amidst frenzied cheering. Some consternation was caused during the proceedings by a rumour of the appearance of the man with the glaring eyes, but this turned out to be a patient from Barnabas wearing a pair of Mr. Morgan's special spectacles.

▭

AT the time of going to press the excitement of the great man hunt has now reached its fastigium, acme or peak-point. A great thrill was provided by the report of a candidate returning from the Examination Hall at Queen Square, that he had seen the man with the glaring eyes masquerading as a surgical examiner of the Conjoint Board. It is not known how far the police have investigated this promising clue.

▭

DR. G. EASTMAN SHEEHAN, of New York, the American plastic surgeon, will deliver a lecture in the Physiological Theatre on Monday, July 29th, at 4.30 p.m., on "Some Aspects of Plastic Surgery." Particular reference will be paid to skin grafting and eight cinematographs of operations will be shown.

Cancer of the Tongue

A Clinical Lecture delivered at Guy's Hospital by W. H. Ogilvie, Esq., M.Ch., F.R.C.S.

GENTLEMEN,—We all know that cancer is curable in its early stages by excision or by radium. Whatever its site, we can anticipate a five-year survival of 80 per cent. or more if we meet it really early : that is if the history is short and the size and appearance of the growth show that the history is a true one, and if the growth is small and strictly limited to its site of origin and has not involved neighbouring structures or spread along lymphatic channels. We repeatedly tell ourselves and the public that improvement in the results of cancer treatment depends upon early diagnosis. But such early diagnosis is very often impossible, not because of stupidity on the part of the patient, not because of lack of care on our part, nor yet because the cancer is inaccessible to ordinary methods of examination, but because it gives rise to no symptoms whatever. Pain, usually the first herald of disease, and intimately associated in the minds of the public with cancer, is conspicuously absent. Pain in malignant disease is due to sepsis, involvement of neighbouring nerves, or interference with the contraction of a hollow muscular organ—all of which are incidental rather than essential to the process. It can, therefore, be well understood that a patient with a growth of the œsophagus, stomach or colon, may be quite ignorant of its presence till it has reached an advanced stage. But with the tongue it is very hard to realise that this should be so. The tongue is in use every hour of the day. It possesses tactile discrimination higher than any part of the body, and recognises instantly the presence of a raspberry pip or a toothbrush bristle in the mouth. Yet it may be the seat of quite a large growth entirely unknown to its possessor. Only last week an old man presented himself at my Out-Patients with a growth on the right side of his tongue the size of a pigeon's egg. He had only consulted his doctor the previous day because his family had told him that his speech was getting less distinct.

This latency in cancer of the tongue is especially tragic because the disease is among the commonest in this country. It is responsible for more than 1,000 deaths every year. Even among treated cases, cures are obtained in from 15 to 20 per cent. only. In those untreated, or treated too late or inefficiently, death ensues in from 12 to 18 months from the time that the disease has been recognised by the patient. And death from cancer of the tongue is the most horrible, painful and disgusting death we ever see. Yet the disease occurs in a site that is readily accessible, and if it is recognised early, it can be cured.

While patients may miss a cancer of the tongue, we must never do so—and very often we have an opportunity to diagnose it at an early stage. A world-famous member of the surgical staff of this hospital at the time when I entered it as a student was never tired of impressing upon his firm the need for inspecting the tongue as part of a routine clinical examination. "Whenever you see a patient," he would say, "for whatever reason, always feel his pulse and look at his tongue. He expects it of you. It impresses him with your care and thoroughness. And even if you find nothing you are one up." If we follow this rule in our practice we will find many early carcinomata of the tongue, in a stage when treatment can be curative rather than palliative. And if doctors can play this important rôle in preventive surgery, dentists have even greater opportunities. A patient shows his tongue to his doctor only when he is ill, but he gives his dentist an opportunity to inspect it at frequent intervals. Not only may the dentist detect early cancer, but he can do much to prevent its appearance, for there is very strong evidence that neglect of the teeth is its chief cause.

Ninety per cent. or more of lingual cancers occur in man, and the majority appear between the ages of 45 and 60. They may rarely be seen in patients as young as 30, and are not uncommon in the decades after 60.

The tongue consists of voluntary muscle covered by stratified squamous mucous membrane. In microscopic section, the points which allow a preparation of the tongue to be "spotted" immediately are the criss-cross arrangement of the bundles of striated muscle, the small amount of fibrous tissue, and the presence of fat and areolar tissue between the muscle layers, and the squamous mucous membrane with abundant papillæ. Cancer of the tongue is a squamous-celled epithelioma. At one part there occurs a downgrowth into the substance of the tongue of solid club-shaped columns of epithelial cells, which push their way between the muscle bundles. Isolated nests of similar cells may be seen in intermuscular spaces away from the main mass. The columns and the islands of malignant cells are surrounded by a zone of round-celled infiltration. The predominating type of cell in the usual carcinoma of the tongue is one resembling the prickle cell of squamous epithelium. In places the cells show

a tendency to keratinisation, and the keratin is deposited in a laminated whorl, surrounded by flattened cells, the whole forming a " cell nest." The type of cell and the degree of keratinisation, however, varies in different growths. At one extreme is the typical prickle cell epithelioma with abundant cell nests, at the other a growth consisting of undifferentiated epithelial cells, the section showing frequent mitoses but no cell nests. The gross characters and malignancy of the growth vary with its microscopical appearance, the keratinising varieties tending to form projecting tumours or ulcers and growing relatively slowly, the undifferentiated types giving rise to nodular non-ulcerating masses which burrow deeply and grow rapidly.

The factors which predispose to carcinoma of the tongue are by no means certain. Text-books tell us that syphilis is present in from 60 to 80 per cent. of patients. I personally believe this to be one of those statements that have been handed down from book to book, and I very much doubt whether a critical analysis of a present-day series would support such a conclusion. It is true that chronic superficial glossitis very often precedes cancer. But chronic superficial glossitis is by no means always due to syphilis, and the proportion of cancers which originate in this lesion is small. My impression of the typical patient with cancer of the tongue is a blameless old man with a beard, whose monotonous marital fidelity has driven him to the solace of tobacco. Syphilis must be accepted as a cause; smoking is almost certainly another, explaining the great preponderance of the disease in men. Various chemical irritants, chewing tobacco, strong spirits and fierce condiments also play their part, as is shown by the high incidence of cancer among races where the betel nut is chewed. But the repeated trauma of jagged and septic teeth is probably the chief cause. A history of previous dental irritation is almost the rule, and the commonest site for cancer is where the tongue lies in contact with the molar teeth when at rest.

The favourite place for lingual cancer is therefore the side of the tongue, in its middle third. Next in frequency come the side in its posterior third, the dorsum towards the front but not the tip, and last the base. A simple diagram illustrates the site of the more common chronic lesions of the tongue.

The growth may assume several forms, of which the commonest are :—

1. A warty outgrowth projecting from the surface, with an indurated base.

2. A nodular type, extending diffusely and burrowing deeply into the substance of the tongue, but projecting little, not ulcerating, and therefore showing little abnormality on the surface of the tongue.

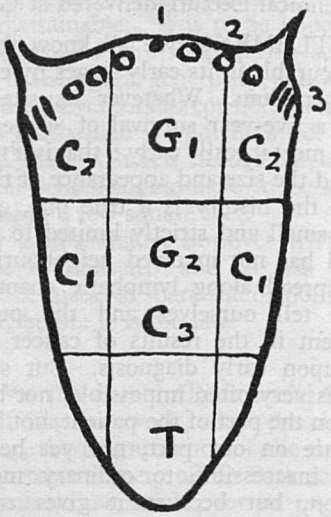

Fig. 1

1. Foramen cæcum.
2. Circumvallate papillæ.
3. Foliate papillæ.

C. Cancer.
G. Gumma.
T. Tubercle.

3. An ulcer with hard, raised, everted edges and a foul, sloughing base.

4. A deep fissure, with much induration of the surrounding parts of the tongue.

The first two types produce little interference with the movements of the tongue in their early stage; the last two are characterised by fixation.

The warty type of growth is usually seen on the dorsum of the tongue, near but rarely on the mid-line; it is often superimposed on chronic superficial glossitis. In section it is characterised by abundant cell nests, and it is not very malignant, spreading late to the glands. In a general way it may be said that the outgrowing tumours consist of differentiated cells and metastasize late, while the ingrowing ones are undifferentiated and metastasize early.

The nodular type occurs on the side, and in the posterior third of the tongue. The cells are undifferentiated and there are no cell nests. These nodular growths grow rapidly, spread early to lymphatic glands and are particularly malignant, not only because of their rate of growth, but because they do not project or ulcerate and are therefore often unnoticed till they have attained a considerable size, or till the hard fixed glands call attention to their presence.

The ulcer with raised edges is the commonest form of cancer in the tongue, and is usually seen on the side. It is that commonly described in

books. The edges stand up from the surface and are hard, and the hardness extends perhaps half an inch around them into the substance of the tongue. The base consists of sloughing broken-down growth, from which a foul and particularly offensive discharge proceeds. When the base has been cleared by repeated mouth-washes, or wherever its surface is exposed uncovered by slough, its appearance is quite unmistakable, and I should advise you to make yourselves familiar with this appearance, on which you should be able to distinguish an epithelioma from any other lesion in the mouth. The colour is a uniform coral pink, but the characteristic feature is that the surface is pock-marked with small depressions visible to the naked eye, the pits from which epithelial " pearls " have fallen. The appearance is that of an aeroplane photograph of a shell-scarred battlefield coloured pink.

The indurated fissure may occur on the dorsum of a tongue already fissured by chronic glossitis, but it is usually seen where the tongue joins the floor of the mouth. It produces early fixation of the tongue and involvement of glands, and is, perhaps, the most malignant type of all. Because it is not seen, it frequently escapes detection till it has advanced beyond all hope of curative treatment.

Cancer of the tongue spreads by local extension and by growth along the lymphatics draining the part; local extension gives rise to fixation, ulceration and pain. The lymphatic drainage of the tongue is to a large number of glands scattered over a wide area. Lymphatic vessels from the tip pass through the floor of the mouth to the submental glands lying between the anterior bellies of the digastric muscles. Those from the side and dorsum drain into the submaxillary lymphatic glands, most of these lying under cover of the lower border of the mandible, but one outlying member, the masseteric gland, lying on its surface close to the facial vein. The back of the tongue drains to the upper deep cervical glands and also to small glands lying on the surface and in the substance of the parotid, and between the pharynx and prevertebral muscles. All these glands in turn empty their lymph into the upper deep cervical group, which may also receive lymph direct from any part of the tongue. In the spread of cancer any of this deep group may show the first clinical evidence of involvement, and the tonsillar gland which lies at the level of the great cornu of the hyoid in the angle between the common facial and internal jugular veins is most often the site of metastasis. Secondary deposits are, however, rarely seen except at a late stage below the omo-hyoid muscle. The spread of cancer of the tongue to more distant parts of the body—the lungs, the liver, or the lymphatic tissues other than those in the neck—is exceedingly rare. Glandular involvement in the neck is usually limited to the side of the growth, unless this approaches the mid-line of the tongue.

Patients with cancer of the tongue come to us for various reasons. Sometimes we find the growth when we are making a routine inspection of the mouth; sometimes the patient accidentally notices it himself. More often he comes because of pain, increasing salivation, difficulty in speech or swallowing, or because he has noticed lumps in the neck.

In any case an examination will start with the tongue itself. We will note the characters of the swelling, and will feel it carefully. Whether it be a warty projection, a nodule, an ulcer or a fissure, if it is really hard, and if it extends at all deeply into the substance of the tongue, it is almost certainly a cancer. Dental and tuberculous ulcers are neither hard nor do they extend deeply. A gumma extends into, or rather originates in, the substance of the tongue, but it is not very hard; it is also in the mid-line, where a cancer never starts, and the induration to which it gives rise is strictly limited.

We will also examine the movements of the tongue. If protrusion, as a whole or to one side, is limited, if the patient cannot turn the tip to the roof of his mouth, cancer is practically certain. We will feel the glands, partly to confirm the diagnosis, partly to estimate the chances of cure. We must search each group in turn, the submental, submaxillary, parotid and deep cervical. Early enlargement of glands in the first two groups can only be detected by bimanual palpation, with one finger in the floor of the mouth and one on the outside. Enlarged glands are not necessarily cancerous, for the sepsis which accompanies every sloughing growth will be reflected in an inflammatory adenitis.

The later stages in the progress of cancer of the tongue present a picture of almost intolerable suffering, yet are so revolting as to provoke too often an involuntary feeling of disgust, rather than of pity, in the beholder. The growth extends to invade neighbouring structures, and as it extends breaks down in its more central parts. The functions of the tongue are lost by fixation and destruction, so that speech becomes unintelligible and swallowing difficult. The fœtid discharge from the growth makes the breath intolerably foul, and saliva continually dribbles from the angles of the mouth. Pain, noticeably absent in the early stages, becomes severe when the floor of the mouth is involved; it is felt locally in the mouth,

and is also referred to the ear and temple along branches of the mandibular division of the trigeminal nerve. The glands in the neck break through the skin and appear as carcinomatous ulcers. Death, never more welcome, comes from exhaustion due to septic absorption and lack of sleep; from pneumonia due to the aspiration of septic particles; or from erosion of a large vessel in the mouth or the neck.

In discussing the differential diagnosis of cancer of the tongue, I should like first to refer to the question of cancer-phobia. Patients, usually women, come to hospital saying that they have had pain on the side of the tongue for some weeks, and that, looking in the glass, they had noticed an ulcer. On examination the "ulcer" nearly always turns out to be the papillæ foliatæ, which can be seen at the point where the palato-glossal fold joins the tongue if it is protruded far enough, but which are invisible with anything but complete protrusion. Often the papillæ are inflamed. Reassurance, and demonstrations of a similar "ulcer" on the other side of the tongue, will usually give complete relief.

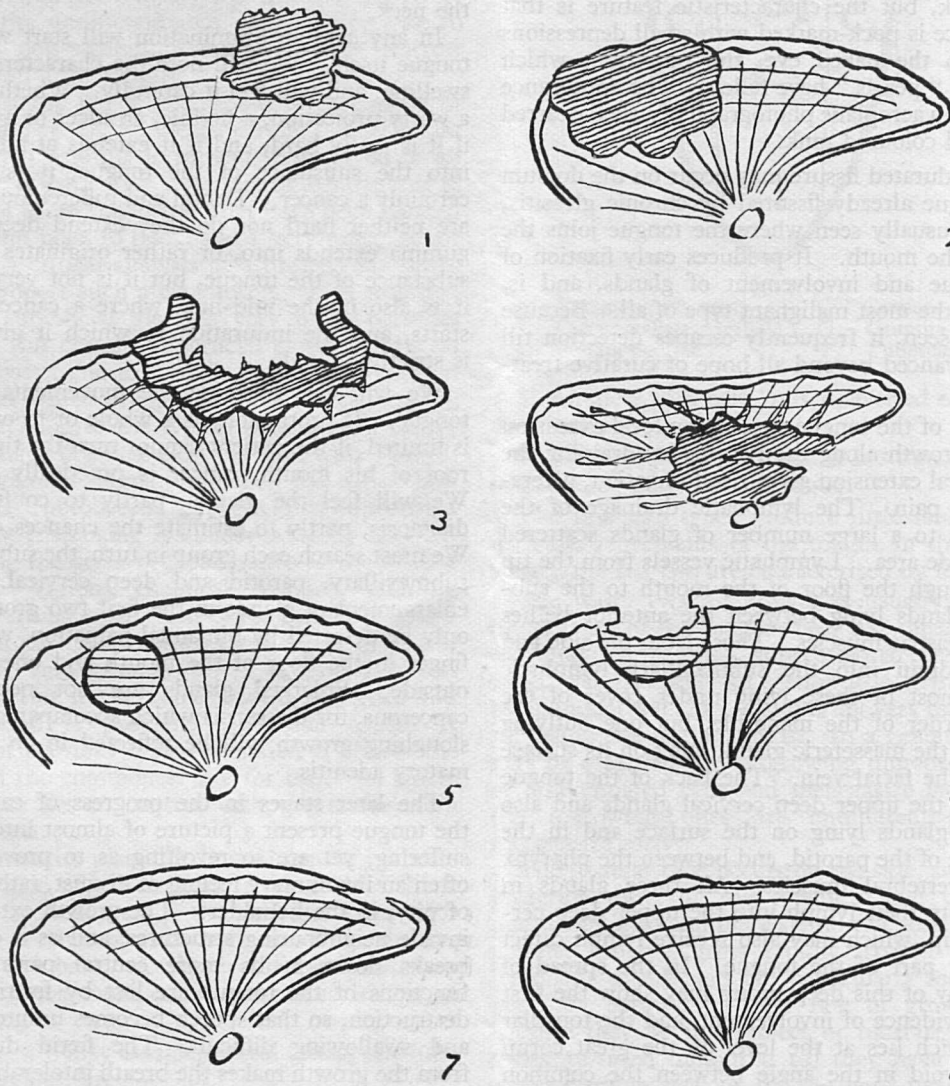

Fig. 2

1. Warty carcinoma.
2. Nodular carcinoma.
3. Carcinomatous ulcer
4. Carcinomatous fissure.
5. Early gumma.
6. Gummatous ulcer.
7. Tuberculous ulcer.
8. Dental ulcer.

The distinction of cancer from the other chronic ulcers of the tongue—gumma, tubercle and dental ulcer—is usually a simple matter.

A gumma occurs in the mid-line at the back of the tongue and is painless. The patients are usually younger, and the glands are not enlarged. A gumma arises in the substance of the tongue and not in the mucous membrane. At first it is a solid lump, deeply situated, rounded, firm but not very hard, and not tender. Later it breaks down to form a gummatous ulcer. Such an ulcer is circular; the edges are sharply cut and not everted, they feel firm and the firmness extends perhaps a quarter of an inch outside the edge, but they are not really hard. The base consists of a tough yellow structureless slough, and there is very little discharge and no smell. When the slough has separated the base consists of clean granulations; at no stage does it show the irregular crater or the pock-marked pink surface of a carcinoma.

Tuberculous ulcers are usually seen in patients with advanced phthisis, whose age and emaciated appearance suggest the diagnosis before the tongue is examined. The usual form is a shallow ulcer near the tip, with thin overlapping margins, and a base showing the underlying tissue, and covered with pale œdematous granulations. It is very painful. On the back of the tongue a tuberculous wart is sometimes seen, which is distinguished from a warty carcinoma by the age and ill-health of the patient, by the absence of any induration, and by the pain; if any doubt is felt upon the point, the wart should be excised with the diathermy needle and submitted for section.

Dental ulcers are usually seen on the side of the tongue, that is in the common site for a malignant ulcer, and the distinction between the two may be one of considerable difficulty. In most cases some source of irritation will be found, a jagged or septic tooth, or a dental plate which fits badly, or has been allowed to get rough at the edge. The margins may be slightly raised above the level of the surrounding mucous membrane, but they are not really hard, they are never everted, and they do not overlie the base. The base is covered by lymph or clean red granulations, and there is no obvious discharge. When the finger is passed over the ulcer, no sudden change of plane from edge to base is felt, and it is clear that there is no deep induration under it. The nearest glands may be enlarged, but if so they are usually tender and are not hard. When we find these characters we can be reasonably certain that the ulcer is of traumatic and not malignant origin, but it is very unwise to dismiss the possibility of cancer or to allow the patient to cease attendance till the ulcer has healed and the tongue resumed its normal appearance. We should remove all sources of local irritation, extract offending teeth and discontinue the use of dentures, and prescribe frequent mouth-washes. With this treatment a traumatic ulcer will heal in three weeks. If it has not altered appreciably we can accept the diagnosis of malignancy with considerable confidence. If it has improved, but not disappeared, we shall be wise to excise it and examine it under the microscope. I would ask you, however, never to "remove a piece for section" or to allow anybody else to do so. To cut through any lesion in which malignancy is even a remote possibility is to commit one of the few unforgivable surgical crimes. Malignant cells may be reimplanted locally, or cast loose in the lymphatic or blood stream, and if the patient eventually dies of metastases, we should carry his death on our consciences. This rule applies not only to the tongue, but to the breast, the rectum, the bladder and the vagina—to all places where the avulsion of bits of tissue through some kind of "scope" is tantalisingly easy, but wickedly dangerous.

Hospital Appointments

THE following appointments and reappointments have been made by the Court upon the recommendation of the School Council, duties to commence on October 1st, 1935 :—

Resident Surgical Officers—

Mr. H. J. B. Atkins, B.M., B.Ch., F.R.C.S., appointment for one year.

Mr. W. J. Ferguson, M.S., reappointment for one year.

Assistant Director (Female) of Venereal Diseases Department—

Miss M. Rawlins, M.B., B.S., reappointment for one year.

Medical Officer (Male) in V.D. Department (also attached to Surgeon in Charge of Genito-Urinary Department)—

Mr. H. G. N. Cooper, B.M., B.Ch., reappointment for one year.

Medical Officer (Male) in V.D. Department (also attached to Physician in Charge of Skin Department)—
Mr. C. A. Clarke, B.M., B.Ch., M.R.C.P., appointment for one year.

Medical Officers (Female) in V.D. Department—
Mrs. D. K. Brown, M.B., B.S., reappointment for one year.
Miss M. R. Levack, M.B., Ch.B., reappointment for one year.

Senior Assistant Bacteriologist—
Mr. H. G. Close, M.D., appointment for two years.

Additional Assistant Bacteriologist—
Mr. J. C. Colbeck, L.R.C.P., M.R.C.S., appointment for two years.

Chief Clinical Assistant and Registrar, Ear, Nose and Throat Department—
Mr. A. Bowen-Davies, M.B., B.Ch., appointment for two years.
Mr. W. H. Bradbeer, M.B., B.S., reappointment for one year.

Chief Clinical Assistant and Registrar, Ophthalmological Department—
Mr. C. J. F. Blumenthal, L.R.C.P., M.R.C.S., appointment for two years.
Mr. E. C. Zorab, L.R.C.P., M.R.C.S., appointment for two years.
Mr. P. M. Moffatt, M.D., D.P.H., D.O.M.S., reappointment for one year.

Chief Clinical Assistant and Registrar, Neurological Department—
Mr. S. Behrman, M.R.C.P., appointment for two years.

Chief Clinical Assistant and Registrar, Department of Psychological Medicine—
Mr. C. H. Rogerson, M.D., M.R.C.P., appointment for two years.

Chief Clinical Assistant and Registrar, Dermatological Department—
Mr. S. M. Whitteridge, L.R.C.P., M.R.C.S., appointment for two years.

Chief Clinical Assistant and Registrar, Children's Department—
Mr. W. L. Ogle, L.R.C.P., M.R.C.S., appointment for two years.

Chief Clinical Assistant and Registrar, Orthopædic Department—
Mr. J. S. Batchelor, F.R.C.S., appointment for two years.

Chief Clinical Assistant and Registrar to Medical Out-Patients—
Mr. W. L. Ogle, L.R.C.P., M.R.C.S., appointment for two years.

Instructor of Patients with Defective Speech—
Mr. H. St. John Rumsey, M.A., reappointment for one year.

Registrar and Statistician in Radium Department—
Mr. A. R. Clarke, F.R.C.S., appointment for two years.

Dental Officer to Salomons Welfare Centre—
Mr. F. A. Walker, L.D.S., appointment for one year.

Dental Anæsthetist to Salomons Welfare Centre—
Mr. E. H. Rink, B.M., B.Ch., appointment for one year.

GUY'S HOSPITAL MEDICAL SCHOOL

THE following appointments and reappointments have been made by the School Council for the period commencing October 1st, 1935 :—

Clinical Tutor in Charge of the Preliminary Clinical Period—
Dr. G. A. M. Lintott.

Medical Registrars—
Dr. E. T. Conybeare.
Dr. N. S. Plummer.

Surgical Registrars—
Mr. R. C. Brock.
Mr. A. R. Clarke.

Obstetric and Gynæcological Registrar—
Mr. J. B. Blaikley.

Demonstrator of Anatomy, Part-Time—
Mr. I. G. Robin.

Demonstrator of Operative Surgery, Part-time—
Mr. W. G. Gill.

Resident Anæsthetist—
Mr. R. L. Soper.

Non-Resident Anæsthetist—
Mr. E. H. Rink.

Demonstrators of Anæthetics—
Mr. H. G. N. Cooper.
Mr. R. L. Soper.

Demonstrator of Pathology, Whole-time—
Dr. C. K. Simpson.

Griffiths Demonstrator of Pathology—
Dr. S. J. De Navasquez.

Gull Student in Pathology—
Dr. C. K. Simpson.

Demonstrators of Chemistry, Whole-time—
Mr. F. H. Brain.
Mr. W. M. Colles.
Dr. B. Levin.

Demonstrator of Chemistry, Part-time—
Mr. S. Holt.

Demonstrators of Physics, Whole-time—
Mr. H. J. Starks.
Dr. A. C. R. Wakeman.

Demonstrator of Physics, Part-time—
Mr. W. W. Gilford.

Demonstrators of Biology, Whole-time—
Mr. C. Boswell.
Mr. J. S. Wilkie.

Demonstrator of Biology, Part-time—
Mr. W. E. Young.

GUY'S HOSPITAL DENTAL SCHOOL

THE following appointments and reappointments have been made by the School Council for the period commencing October 1st, 1935 :—

Assistant to the Director of the Conservation Room—
Mr. A. R. F. Thompson.

Administrative Dental Officer—
Mr. H. A. M. Ching.

Registrars in the Dental Department for Children–
Mr. R. Cutler.
Mr. K. E. Pringle.

Demonstrators of Dental Prosthetics—
Mr. J. W. Mansie.
Mr. R. J. Wheatley.
Mr. G. H. Ellingham.
Mr. G. G. T. Tregarthen.

Demonstrators of Operative Dental Surgery :—
Morning Attendance—
Mr. C. B. de V. Green.
Mr. C. I. Hagger.
Mr. J. W. Hallam.
Mr. C. S. Henderson.
Mr. J. A. C. Hunter.
Mr. D. J. Wandless.
Afternoon Attendance—
Mr. H. H. Kenshole.

Demonstrator of Dental Bacteriology—
Mr. C. S. Henderson.

Demonstrator of Dental Histology—
Mr. F. S. Warner.

Correspondence

Our Orchestra

To the Editor of the GAZETTE

SIR,—Might I be permitted to make use of your columns to pay homage to the magnificent show put up by the Hospital Orchestra on the evening of June 20th ?

The occasion was one of sheer achievement when one recalls the fact that the Orchestra is very much in its infancy, and one cannot help but feel that, given adequate opportunities, the Hospital might soon be well proud of it.

The programme of that evening was one which should have appealed to a very wide public, beginning, as it did, with Schubert's " Marche Militaire " ; this was played with gratifying decisiveness in the first part, coupled with adequate delicacy in the second and third parts. Strauss's " Blue Danube " Waltz, which followed, was not, however, quite such a signal success, yet, except for an occasional lagging, was pleasant enough.

The vocalist, in the person of Miss Frida Gabell, a soprano, then made her appearance, and I could not help but admire her excellent diction, a point often overlooked by modern singers ; Miss Gabell was deservedly encored.

Next on the programme was the first movement of Schubert's Unfinished Symphony, and it struck me that this was accomplished very creditably, the tempo being very satisfactory ; indeed, I was sorry that the second movement was not also played.

After a short interval the programme was resumed with the Intermezzo from " Cavalliera Rusticana," but here I must shamefacedly admit that I never cared for it, and therefore I must claim exemption from giving a criticism. Miss Gabell followed, and carried the house, being called upon to give two encores.

Then came the show piece of the evening, in the form of the Grieg Piano Concerto in A Minor. The soloist, Miss Kathleen Cheeseman, acquitted herself most nobly, and it was here that the Orchestra showed its true worth ; indeed, this was the work upon which to judge its achievement, orchestra and soloist blending with commendable precision. Altogether it was a most enjoyable occasion.

However, the attendance, or rather the lack of it, struck me as being a very poor effort on the part of the students ; but here one must remember the general slothfulness of students in supporting

such efforts as these when made by their fellows. It seems that many do not suffer from a surfeit of pride in the achievements of their Hospital—a point to be lamented greatly, and it would be good to see the general atmosphere of *laissez faire*, which now exists, shattered. They are the means whereby the Hospital can regain its musical eminence of former days.

It is impossible to close without noting that the Hospital is the possessor of a conductor in whose experienced hands the Orchestra ought to attain a high standard of efficiency; to him our thanks are due for the treat of June 20th. Also we are very fortunate in that we have a very able secretary to the Musical Society, who somehow manages to make everything run very smoothly and efficiently despite the fact that he is deep in his Finals.

Yours, etc.,

A. G. C. C.

Guy's Hospital,
S.E.1.

Sport

Lawn Tennis

Second Round, Junior Cup

THE delayed Junior Cup Tie against St. Thomas's was played on July 3rd. A strong team won by 9 matches to 2. St. Thomas's, the holders for the last two years, were strong opposition, and it augurs well for the future that the win was so decisive with four newcomers in our team.

A lead of 4—2 was established in the "singles." Piercy's strong service gave him an advantage against a steady opponent who never found a satisfactory reply to it. Harley, who played only in the singles, also showed good form, and won convincingly in straight sets. The closest match was the one in which Marley, after a poor start, recovered, and was unlucky to lose a hard-fought second set. Southwell was commendably steady, and won easily against an erratic opponent.

Only two rounds of the doubles were played, and Guy's proved themselves much superior, winning five of the six matches. Piercy and Henderson, who had never before played together, showed an excellent understanding of each other's game. Both lobbed well, and, especially Piercy, killed the lobbed reply with power and accuracy.

Archer and Southwell did well to beat St. Thomas's first pair in two sets.

Hunt and Marley won one match, but left the other drawn at 8—8 in the final set.

Singles

F. J. Piercy beat Bond, 6—2, 6—2.
A. N. Marley lost to Hargrove, 1—6, 6—8.
R. L. V. Henderson beat Ward, 6—2, 6—1.
H. R. S. Harley beat Green, 6—1, 6—2.
W. B. Southwell beat Moseley, 6—1, 6—2.
J. N. Archer lost to Maisey, 1—6, 1—6.

Doubles

Piercy and Henderson—
  Beat Bond and Ward, 6—0, 6—3.
  Beat Maisey and Moseley, 6—1, 6—1.
Hunt and Marley—
  Beat Maisey and Moseley, 7—5, 6—3.
  Drew with Green and Hargrove, 6—3, 4—6, 8—8.
Archer and Southwell—
  Beat Bond and Ward, 6—2, 6—3.
  Lost to Green and Hargrove, 2—6, 0—6.
  Beat Maisey and Moseley, 6—1, 6—1.

Semi-Final Senior Cup

Guy's v. King's College Hospital

ST. THOMAS'S having scratched, Guy's met King's at very short notice on Monday, July 8th, and won by 9 matches to 2. We were unable to play a full side, but, as King's were in a similar position, our only complaint is that the second team strength had to be depleted. It is hoped to tighten up the rules of the competition before next year and make a similar position impossible in the future.

A lead of four to one was established in the singles, C. A. Boucher leaving his match unfinished at one set all. The doubles gave us another five matches, and we entered the Final against London. It is hoped to find a suitable date for this match, but the delay has found us without certain key players, and it was feared at one time that it could not be played before September owing to the holidays.

Singles

H. C. N. Cooper beat C. R. Steed, 6—3, 6—0.
F. J. Piercy beat D. J. Moore, 6—4, 6—3.
C. A. Boucher drew with M. L. Corera, set all.
E. P. O. Watson beat D. I. Williams, 6—1, 6—1.
H. R. S. Harley beat J. C. S. James, 6—2, 6—2.
W. Hughes lost to O. Gunnery.

Doubles

H. C. N. Cooper and C. A. Boucher—
Beat Moore and Steed, 6—1, 6—1.
Beat James and Gunnery, 6—1, 6—1.

Piercy and Watson—
Beat Moore and Steed, 7—5, 6—2.
Beat Corera and Williams, 6—2, 6—3.

Hughes and Harley—
Beat James and Gunnery, 6—2, 7—5.
Lost to Corera and Williams, 1—6, 3—6.

THE second team defeated King's on July 10th and also entered the Final and meet Bart.'s on July 17th. No results have been received, but it is understood that King's were weakened by the needs of their first team and lost easily.

Guy's, therefore, have the opportunity of winning both the Senior and Junior Cups once again.

E. P. O. WATSON.

Swimming Club

Guy's v. St. Bartholomew's Hospital
(League)

ON Friday, June 7th, Guy's met Bart.'s at Fitzroy Street Baths. The game was considerably more even than that played at the Nurses' Gala, but Bart.'s had the advantage of their own bath and the choice of ends.

The scoring was opened in the first minute by R. J. C. Sutton, the English International, who broke away to place a shot that Guy's goalkeeper hardly saw. A minute later, however, Guy's retaliated with a fine shot scored by T. L. Weston from the left wing. The score remained at one-all till half-time, when Guy's changed over to the deep end and it became a question of holding Sutton. Sutton, however, took a lot of holding, and scored three more before the match ended.

Guy's were, of course, hampered by the fact that one, and sometimes two, of our men had to be marking Sutton, and this upset the working of the team.

Result.—Lost, 1—4.

Team.—J. Crane; C. Styer, C. Halamandres, J. A. R. Smit; A. D. MacPherson, A. M. McCall, T. L. Weston.

Guy's v. Royal Dental
(League)

IN this game, played on Thursday, June 13th, at Fitzroy Baths, Guy's found themselves faced by a very weak opposition. Within half a minute of the start Styer had scored, and the rest of the game was a procession of goals until the Royal Dental scrambled a goal home towards the end of the second half.

Result.—Won, 14—1.

Guy's v. Charterhouse

GUY'S visited Charterhouse School at Godalming on June 15th for the first time. The Hospital started well by winning the 115 yards and also taking first and second places in the 57 yards. Then Charterhouse pulled level after the diving, in which they took first and second places. The decisive race was the relay, which the Hospital lost by a touch.

Score.—19—15 points.

Result.—Charterhouse won by 4 points.

Team.—J. Drew, T. Pulin, D. L. Power, C. Halamandres, Bulow.

Cricket

Guy's v. Catford Wanderers

ON Saturday, June 1st, Guy's entertained Catford Wanderers at Honor Oak Park. Wright won the toss and decided to bat, but Guy's fared disastrously against some good bowling. H. D. Foster, C. G. Wright, P. H. Birks and T. J. M. Lowry played valiant knocks and saved the side from a cheaper dismissal. Catford, after losing two wickets for seven runs, passed the Hospital total without further loss.

Scores.—Catford Wanderers, 160 for 5 (W. Wylde, 2 for 31).

Guy's

G. M. A. Brown, c. Fear, b. Crocker	4
T. D. H. Ridsdale, c. Fear, b. Crocker	1
L. G. Morey, b. Crocker	2
A. D. Willis, st. Fear, b. Crocker	5
H. D. Foster, c. and b. Hook	16
S. M. Whitteridge, c. Evans, b. Hook	0
C. G. Wright, b. Crocker	13
P. H. Birks, b. Crocker	10
T. J. M. Lowry, not out	12
R. L. Skea, c. Meads, b. Crocker	9
W. Wylde, run out	0
Extras	8
Total	80

Guy's A XI v. Athlone

GUY'S turned out an A XI against Athlone on Saturday, June 8th, at Honor Oak Park and won by five wickets. The visitors batted first and against the Hospital bowling fared rather badly, being all out for 93. The Hospital replied with 106 for five, G. O'Gorman and W. L. Trick batting well.

Scores.—Athlone, 93 (R. L. Skea, 5 for 35; S. Caffey, 2 for 10; W. Wylde, 2 for 17; G. O'Gorman, 1 for 23).

Guy's

G. M. A. Brown, b. Reeve	1
C. G. Wright, b. Golder	12
G. O'Gorman, b. Saunders	29
W. L. Trick, hit wkt., b. Reeve	29
R. L. Skea, c. Hooper, b. Benjamin	16
S. Coffey, not out	13
H. A. Thomas, not out	5
Extras	1
Total for 5 wickets	106

E. A. Moore, W. Wylde, A. M. Platt, F. N. Glover—did not bat.

Guy's v. U.C.S. Old Boys

ON Saturday, June 22nd, Guy's entertained U.C.S. Old Boys at Honor Oak Park and won by 51 runs. The Hospital batted first and against good bowling runs came slowly. The opening stand realised 76 before T. D. H. Ridsdale was unfortunately run out after a good knock of 44. C. G. Wright declared his innings closed at 138 for seven, after sending his later bats in to get runs quickly, and left U.C.S. Old Boys 1½ hours' batting. In the 1½ hours the visitors were put out for 87. S. M. Whitteridge bowled well, varying his length and pace skilfully.

Scores.—U.C.S. Old Boys, 87 (S. M. Whitteridge, 5 for 31; R. L. Skea, 3 for 27; W. Wylde, 2 for 9).

Guy's

G. M. A. Brown, b. Moran	51
T. D. H. Ridsdale, run out	44
A. D. Willis, b. Moran	1
L. G. Morey, b. Taylor	7
P. H. Birks, l.b.w., b. Taylor	5
T. J. M. Lowry, b. Moran	0
S. M. Whitteridge, not out	4
C. G. Wright, b. Moran	5
W. E. Greenwood, not out	5
Extras	16
Total for 7 (declared)	138

R. L. Skea and W. Wylde did not bat.

Guy's v. Pinner

ON Monday, June 24th, the Hospital, with rather a weak side, visited Pinner and were defeated. Guy's batted first and were all out for 69, A. D. Willis making a good 26. Pinner replied with 132 for nine. Guy's batted a second time and made 127 for two, L. G. Morey getting 58 not out and C. G. Wright 43.

Scores.—Pinner, 132 for 9.

Guy's

A. D. Willis, c. Smith, b. Brown	26
W. E. Greenwood, b. Hancox	13
L. G. Morey, b. Brown	10
P. H. Birks, c. Brown, b. Roncoroni	1
C. G. Wright, b. Roncoroni	2
T. J. M. Lowry, b. Roncoroni	1
R. L. Skea, b. Hancox	1
W. L. Trick, b. Hancox	0
F. Walt, c. Smith, b. Roncoroni	5
G. C. Sprigings, b. Roncoroni	1
W. Wylde, not out	0
Extras	9
Total	69

Guy's v. St. Bartholomew's

ON Wednesday, June 26th, Guy's visited Winchmore Hill to play Bart.'s in a friendly game. Guy's batted first and completely mastered the Bart.'s bowling, thus obtaining 200 runs; of these G. O'Gorman made a good 64. The last wicket added 40 runs, the feature of this stand being a good not-out innings of 34 by T. J. M. Lowry. Bart.'s fared badly, and were all out for 71, after losing their first three wickets for four runs.

Scores.—Bart.'s, 71 (R. L. Skea, 3 for 19; A. L. Young, 3 for 19; G. O'Gorman, 3 for 12; W. Wylde, 1 for 9).

Guy's

T. D. H. Ridsdale, c. Dolly, b. Cochrane	9
G. M. A. Brown, run out	36
W. E. Greenwood, b. Simpson	0

H. Jones-Lewis, c. Capper, b. Simpson	8
G. O'Gorman, b. Cochrane	64
C. G. Wright, c. Howell, b. Capper	0
P. H. Birks, b. Cochrane	23
R. L. Skea, c. Dolly, b. Cochrane	12
T. J. M. Lowry, not out	34
A. L. Young, l.b.w., b. Cochrane	0
W. Wylde, b. Parrott	3
Extras	10
Total	200

Guy's v. Old Leysians

GUY'S entertained the Old Leysians at Honor Oak Park on Saturday, June 29th, and a very enjoyable game ensued. The Guy's batting was very consistent—L. G. Morey, A. D. Willis and P. H. Birks batting very well. At tea, C. G. Wright declared his innings closed at 192 for six. This was a sporting declaration, as it left the visitors 2¼ hours, the same time as the Hospital had. The visitors accepted the challenge and went for the runs. Just on time the winning hit was scored.

Scores.—Old Leysians, 194 for 6 (R. L. Skea, 4 for 77).

Guy's

G. M. A. Brown, c. Whelpton, b. Aliston	16
T. D. H. Ridsdale, c. Aliston, b. Walker	3
A. D. Willis, c. and b. Aliston	39
L. G. Morey, b. Bate	65
P. H. Birks, st. Jones, b. Bate	40
C. G. Wright, b. Aliston	26
Extras	3
Total for 6 wickets (declared)	192

W. E. Greenwood, T. J. M. Lowry, H. D. Foster, R. L. Skea, A. L. Young—did not bat.

Guy's v. Malden Wanderers

GUY'S visited Malden on Monday, July 1st, and played Malden Wanderers in their cricket week. The home side batted first and amassed the total of 250 for 5 wickets before declaring. The Hospital made a good reply, and the match was left drawn with Guy's 172 for 6. G. O'Gorman batted well, making a good 63.

Scores.—Malden Wanderers, 250 for 5 declared (R. L. Skea, 2 for 65 ; G. O.Gorman, 2 for 67).

Guy's

G. M. A. Brown, b. Ransome	26
T. D. H. Ridsdale, b. Dawes	32
G. O'Gorman, b. Dawes	63
L. G. Morey, c. Wood, b. Ransome	21
A. D. Willis, not out	16
P. H. Birks, c. Watts, b. Ransome	0
C. G. Wright, b. Ransome	0
Extras	18
Total for 6 wickets	172

W. E. Greenwood, T. J. M. Lowry, R. L. Skea, W. Wylde—did not bat.

Guy's v. Middlesex Hospital

Semi-Final of Inter-Hospitals Cup

ON July 4th, Guy's entertained Middlesex Hospital at Honor Oak Park for the Semi-Final of the Inter-Hospitals Cup. Guy's batted first and, due to some good batting by G. M. A. Brown, A. D. Willis, P. H. Birks and R. L. Skea, made 243. Middlesex got these for the loss of three wickets, and thus passed into the Final.

Scores.—Middlesex Hospital, 245 for 3 (R. L. Skea, 2 for 78).

Guy's

G. M. A. Brown, c. Miller, b. Muir	70
T. D. H. Ridsdale, run out	5
A. D. Willis, c. Contractor, b. Greenwood	26
L. G. Morey, b. Gethen	15
G. O'Gorman, c. Miller, b. Gethen	0
P. H. Birks, not out	58
C. G. Wright, c. Evans, b. Thompson	9
T. J. M. Lowry, c. Miller, b. Thompson	9
R. L. Skea, c. Pile, b. Muir	31
A. L. Young, l.b.w., b. Gethen	0
W. Wylde, b. Muir	0
Extras	20
Total	243

Guy's v. The Stoics

ON July 10th, Guy's entertained the Stoics at Honor Oak Park, and the game resulted in a win for the Hospital. Guy's batted first and made 265 for 8 before Wright declared his innings closed. The features of the batting were the innings of H. Jones-Lewis (72 not out), L. G. Morey (61), and T. D. H. Ridsdale (59).

The visitors fared badly against the bowling of R. L. Skea and L. G. Morey, and were all out for 107, leaving Guy's the victors by 158 runs.

Scores.—The Stoics, 107 (R. L. Skea, 4 for 39 ; L. G. Morey, 4 for 40).

Guy's

T. D. H. Ridsdale, l.b.w., b. Andrews	59
G. M. A. Brown, b. Chapman	0
L. G. Morey, b. Trollope	61
P. H. Birks, c. Markham, b. Chapman	30
C. G. Wright, b. Chapman	1
H. Jones-Lewis, not out	72
T. J. M. Lowry, b. Williams	0
R. L. Skea, b. Moore	27
H. D. Foster, l.b.w., b. Chapman	0
W. L. Trick, not out	2
Extras	14
Total for 8 wickets declared	265

W. Wylde did not bat.

Fencing

We congratulate T. M. Pattison on having fenced for England at the International Championships held at Lausanne.

Hospital Information, etc.

Notice

WE are informed by the Medical School office that the following appointments are vacant :—

Part-time demonstratorship in Pathology.

Part-time demonstratorship in Bacteriology.

Anderson demonstratorship in Clinical Chemistry, and Part-time demonstratorship in Physiology.

These last are to be combined. Applications should be made immediately to the Medical School Office.

Pass List

SOCIETY OF APOTHECARIES OF LONDON.

Materia Medica and Pharmacy.

T. Sherman.

Anatomy.

R. J. Healey T. G. Viljoen

Physiology.

R. J. Healey T. G. Viljoen

C. F. Ziervogel

UNIVERSITY OF CAMBRIDGE.
FIRST M.B., B.CH. (NEW REGULATIONS).

PART III.

Elementary Biology

F. E. T. Scott.

PART IV.

Organic Chemistry.

F. E. T. Scott.

M.D. (CANTAB.).

R. A. Ratcliff.

UNIVERSITY OF WALES.
M.B., B.CH.

June, 1935.

Medicine and Surgery.

E. W. M. Williams.

Papers by Guy's Men

H. W. Barber. Prognosis in staphylococcal infections of the skin. *Lancet*, 1935, ii, 35.

Frank W. Law. Ocular injuries and emergencies. *Clin. Jour.*, 1935, lxiv, 277.

H. St. H. Vertue. The art of weaning. *Clin. Jour.*, 1935, lxiv, 293.

Appointment

Keith Woodruff, M.B., to be Honorary Anæsthetist to Charing Cross Hospital.

Births

TOWNSEND.—On June 12th, 1935, at 27, Welbeck Street, W.1, to Meg (née Daltry), wife of C. G. Townsend, M.B.—a son.

GILBERT—On June 2nd, at Mongu, Barotseland, N. Rhodesia, to Margaret (née Toulson) wife of Dr. F. W. Gilbert—a daughter.

EDS. { P. W. C. / M. A. P.

GUY'S HOSPITAL GAZETTE

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PASSIM

IT is twenty-one years almost to the day that the lamps began to go out all over Europe, and, as the night deepened, left Lord Grey wondering at Westminster whether in his own lifetime he would ever see them lit again. Lord Grey is dead now, and he never saw more than the most transient, fitful gleam. Ten years ago, perhaps, it might have been possible to hear members of the British public, as they bent over the gas fire in January, remark that there could never be another war now. Even two years ago it was possible to hear the suggestion of war discounted as a remote improbability. The League of Nations was looked to; it was to be the very present help in time of trouble. Though it failed utterly (as utterly, one would have thought, as it was possible for an organisation to fail) in the Chino-Japanese Manchurian dispute, though it stood aside in majestic isolation in the three years' war between Bolivia and Paraguay, still our eyes are turned, such is the force of the conditioned reflex, to the League to-day. But it cannot be possible now to hear, even among the most euphoric members of the British public, boasting over their beer in August, any such remark as might have been overheard in 1925 with regard to the impossibility of war.

The spirit of aggression is amongst us, and on the flimsiest and most trumpery of pretexts the Italian nation is to go to war with Abyssinia. Even now the situation is not without its dreary pretence at heroics. Mussolini, if he be reported aright in the less reputable British papers, has attempted to disguise the Italian attitude as an altruistic crusade against the coloured races—a view which is too futile to be worth a moment's consideration; the poet d'Annunzio has sought to invest the affair with a forlorn and threadbare cloak of glamorous romance, an attempt which must be construed either as an insult to the intelligence of the youth of Italy or as the idle prattling of a pathetic and imbecile old man, awakening in us, as it does, a dull resentment at the lingering echoes of a farewell to Leicester Square and "We don't want to lose you, but we think you ought to go."

To pretend that the incidents at Wal-wal and Wardair are the reasons for the intended Italian invasion is a wanton and childish hypocrisy. There is not the slightest excuse for the Italian attitude, and everybody knows it. To rake up the Adowa affair of 1896 is merely further to weaken the position of the Italians. Even so great an authority as Mr. Wickham Steed has enunciated that Abyssinia was not only not the aggressor on that occasion, but showed leniency in waiving advantages that were rightly hers. We live in a world in which, where any issue of any magnitude is involved, ethical considerations practically do not arise, and when a person such as Mr. H. M. Gooch, secretary to the World's Evangelical Mission, writes to *The Times* informing us that in Abyssinia there is religious toleration and a fair circulation of Bibles, though by so saying he does not wish to "prejudice the issue," he may confidently be assured that there is not the slightest likelihood of his prejudicing the issue in any way whatever.

At the time of going to press Italy is on the verge of attending the meeting at Geneva. What will the League do? It seems that one of two courses must result. Either there will be a war, or as the result of negotiations Abyssinia will be persuaded to make concessions and a campaign of butchery and bloodshed will have been avoided. If the former issue obtains, then the question arises as to how the League will interpret Article XI of the Covenant, which recommends that the League should take action whether the situation immediately affects its members or not. Italy and Abyssinia are both members of the League, and both are immediately affected, but there is a masterly ambiguity about that phrase, "take action." If a war is the result will the other

members of the League join in? We may predict with considerable confidence that they will not. If, on the other hand, Abyssinia is persuaded into making concessions, then war will be avoided and young lives saved. This, no doubt, will be hailed with widespread acclamation as a triumph for the League. And Abyssinia will be the poorer, while Mussolini laughs in Rome; the echoes from the seven hills may even reach Geneva.

If war is the result, we shall have the final evidence of what we have long realised—that the League is dead. If war is avoided, among the bouquets of the admiring crowd we shall still send our little wreath.

In the meantime, well . . . Let's have another peace ballot.

▭

WE congratulate Dr. Hurst, our Senior Physician, on the very signal honour which has recently been conferred upon him by the University of Oxford. He has been awarded the Osler Memorial Medal. This medal is awarded once every five years to the graduate of Oxford University who has done the most distinguished work for the advancement of medicine. It has so far been given to one other only, Sir Wilmot Herringham; Sir Archibald Garrod, at its foundation, was given a replica.

The award of this medal to Dr. Hurst will give the greatest satisfaction to Guy's men throughout the world.

▭

RECENTLY at the Hospital we have been privileged to hear lecture two distinguished members of the American medical profession.

Dr. Paul Dudley White, the cardiologist, who has earned the gratitude of so many smokers by his belief in the relative unimportance of smoking in angina, was in this country to deliver the St. Cyr lecture on "Chronic Constrictive Pericarditis."

On his visit to us on the 12th of July he outlined the history of the recognition of the disease, paying generous tribute to the contributions made by Chevers in 1842 and Wilks in 1870 in the *Guy's Hospital Reports*; particular reference was made in the lecture to the operative treatment, of which a cinematograph was shown.

The lecture, which Dr. White has enlarged to cover an outline of all aspects of the condition, will shortly be published in the *Gazette*.

An innovation was introduced into the Anatomy Theatre on Monday, July 29th, when Dr. J. Eastman Sheehan used the microphone to deliver his address on "Some Aspects of Plastic Surgery." The colouring of the cinematographs added greatly to the realism of these quite beautiful demonstrations of technical artistry.

The popularity of these lectures has been such that we may hope to have even more frequently in the future the opportunity of listening to visitors from abroad—we may add particularly from America.

▭

WE publish in this number a list of all the more important journals available in the Wills and other libraries at the Hospital. It is hoped that the list may be useful in saving unnecessary visits to other parts of London by those members of the Staff and students engaged in writing papers. A list of the journals is to be kept available in each of the departmental libraries of the Hospital.

Retirement of Mr. E. B. Dowsett

MR. E. B. DOWSETT, who retired from the Hospital Staff on reaching the age limit on July 18th, joined the Hospital in 1894, obtaining his L.D.S. in 1897 and the Conjoint in 1899. After acting as Dental House Surgeon, he joined the Staff. As a student, Mr. Dowsett was a keen rugger man; as a member of the Staff he was a popular Dental Tutor—his "Notes on Dental Surgery" has reached its sixth edition. In his later years Mr. Dowsett made the lectures on "Dental Surgery and Pathology" a real help to Guy's men. As an Examiner to the Royal College of Surgeons and to the Universities of London, Liverpool, Birmingham and Sheffield, he has had full scope for the knowledge and fairness which are characteristic of him.

During the War he served as a Colonel with the R.A.M.C.(T.), and saw active service in France, Macedonia and Palestine, ending as D.D.M.S. to the 20th Army Corps. He was mentioned in despatches four times and awarded the D.S.O. Mr. Dowsett has been President of the Metropolitan Branch of the British Dental Association and of the Odontological Section of the Royal Society of Medicine.

His popularity among the students is shown by his election on three occasions as President of the Dental Society here. His colleagues know him as a man of broad outlook, wise in counsel, loyal in friendship; to the students he has been a keen and able teacher, always showing by hard work and clinical ability the true road to success. The great send-off which Mr. Dowsett had upon his last round showed some measure of the affection which Guy's men have for him.

F.N.D.

The Treatment of Injuries

A Clinical Lecture delivered at Guy's Hospital by T. T. Stamm, Esq., F.R.C.S.

GENTLEMEN,—The treatment of injuries to the limbs has in the past been sadly neglected by the medical profession. The reason has been that the correct principles for their treatment both in the acute and chronic stage have never been generally appreciated, so that treatment has in many cases had little, if any, beneficial effect on their progress. As a result the numerous cults of unqualified and largely untrained men have sprung up and prospered increasingly by specialising on the treatment of this class of case, and have virtually taken them out of the hands of the medical profession. This deplorable state of affairs is all the more serious from our point of view, as there is no class of case in which correct treatment is more easily and rapidly productive of gratifying results. The fact that every sports club has its bonesetter or osteopath while very few have a medical man attached is a sufficient indication of our own shortcomings. It is therefore of vital importance that you should thoroughly understand the correct principles upon which your treatment should be based in dealing with injuries to the limbs, both in the acute and chronic stage. To-day I shall try to formulate in an intelligible manner the fundamental rules for the treatment of injuries in the acute stage.

Let us first try to see where our treatment has failed in the past. In the second half of the nineteenth century, Hilton published his classical work on rest and pain. To a large extent as a result of a too literal interpretation of his teaching, complete rest was the order of the day for the treatment of all injuries. The prevalence of tuberculosis of joints at this time and the ill-effects of any active treatment in this condition fostered this doctrine. Although this line of treatment ensured relief from pain as long as it was continued, great stiffness of the affected limb was the inevitable result, and on account of the wasting of the muscle from disuse function was slowly, if ever, regained.

In an attempt to prevent this stiffness the cult of early movements arose, and while the injured limb was still rested as far as active use was concerned, vigorous passive movements of the joints were employed. Unfortunately, it was found that the ultimate stiffness was, if anything, increased by this treatment. Thus the fashion alternated between the two beliefs of rest on the one hand and early movements on the other. At the same time the legions of the bonesetters arose to tackle the resulting stiff limbs, and prospered on our bad results.

Recently the whole question has been brought into prominence again largely as a result of the teaching of Professor Böhler, of Vienna, on the treatment of fractures, and the fallacy in both the above methods is beginning to be appreciated more widely.

In order to understand this we must consider what actually happens inside a limb after it has been injured. The injury, whether it be a fracture, sprain or dislocation, results in discontinuity of tissue with rupturing of blood vessels. The damaged parts become infiltrated with effused blood and lymph, which later will spread to the surrounding structures. In order that the damaged parts may heal, it is merely essential that the broken ends be first approximated together and then maintained in that position until healing is complete. In order to be convinced of the truth of this it is only necessary to consider what happens during the healing stage of a fracture. The new bone which will cement the broken ends together is formed by a process of organisation of the blood clot which lies between the bone ends. The essential feature of organisation consists in the growth of new capillaries into this area from both ends, so that they finally unite across the gap. The slightest movement at this stage will tend to rupture this delicate union, and, if repeated continually, a " no man's land " will be formed which the capillaries are unable to cross to unite with their fellows and non-union will result. Moreover, repeated minor hæmorrhages must occur which, as I shall explain later, will increase the possibilities of ultimate stiffness. I think, therefore, that we may say that our first principle in treatment is the absolute immobilisation of the damaged part until healing is complete, and that early movements which will in any way disturb this are absolutely contra-indicated.

Now, how are we going to prevent this stiffness which we know will occur under this treatment alone? It will be best first to return to our pathological picture to find out what is the actual cause of the stiffness. We have seen that after any severe trauma, blood will be poured out around the damaged parts and will diffuse through the adjacent tissues. This blood must either become absorbed or else remain *in situ* and become organised into scar tissue. If it becomes organised, here is ample cause for the stiffness, for all the tissues which were infiltrated by it must become matted together by scar tissue. The stiffness which results is clearly not a stiffness of the joints

at all necessarily, but is due to the matting together of the surrounding structures, which as a secondary effect will prevent the joints from moving. The problem, therefore, is to promote the absorption of the effused blood and so prevent its organisation. Now, absorption of any exudate depends upon the circulation, and the circulation depends primarily upon muscular activity. Therefore if we can exercise the muscles actively without interfering with the immobilisation of the damaged part, the blood will be absorbed and stiffness will not ensue. Further absorption of the œdema which is such a troublesome feature of many cases will also be promoted. Thus we reach our second principle: to exercise by active use throughout the healing stage as many of the muscles of the limb as is practicable without disturbing the immobilisation of the damaged part.

The fallacies in both the "complete rest" and the "early movement" cults now become clear. With complete rest the effused blood and lymph fail to be absorbed and become organised, while passive movements can only cause further trauma to the damaged part and further bleeding. Thus the belief in complete rest, to which we have always adhered at Guy's, was sound as far as it went, but was only half the story; whereas the early-movement theory was wrong in all respects, for, while hindering the healing process, it could in no way help in the absorption of the exudates.

The third problem is to prevent muscular wasting and restore function as soon as possible after the damaged parts are healed. It is clear that if the muscles are exercised throughout, wasting will not occur, and the problem of restoration of function will be to a large extent automatically solved.

The guiding principles for the treatment of all injuries to the limbs and locomotor apparatus generally may therefore be summarised as follows:—

1. Immobilise the damaged part in the corrected position until healing is complete.
2. Exercise by active use all the muscles in the limb so far as is compatible with (1).

These two simple rules form the whole basis of the modern treatment of injuries. Armed with them and with common sense you cannot go far wrong, and they are worth to you all the text-books on the subject put together.

We can now pass on to consider some examples of the practical application of these principles to different types of injury.

COLLES' FRACTURE

Fracture of the lower end of the radius affords an excellent example of how these principles may be ideally applied. For present purposes we will assume that the first step in treatment, namely, reduction of the fracture, has been accomplished. You have probably all been taught that in order to immobilise a fracture it is necessary to fix the joint above and below it. This is an excellent general rule, and as such may, in some cases, be intelligently broken. A fracture of the lower end of the radius is best immobilised by the application of a plaster cast, in which case it should extend up to, but not including, the elbow. Distally it must enclose the hand, but leave the thumb and fingers free. By these means our first object, namely, to immobilise the fracture, is effectively achieved. Now to exercise the muscles. With the thumb and fingers left free, it is clear that if the patient will use the hand while still in plaster, all the forearm muscles, with the exception of those acting only on the wrist joint, will be actively exercised. In actual fact the muscles of the wrist joint itself will also be used, though the joint itself remains fixed, owing to the phenomenon of reciprocal action. You can easily verify this for yourselves. If you will actively extend your thumb you will observe that your flexor carpi ulnaris muscle contracts at the same time in order to steady the wrist. This action will still continue even though the wrist is fixed in plaster. Thus by active use of the fingers, thumb and elbow all the muscles in the limb can be exercised, even though the wrist joint is immobilised, and our second object can be achieved.

The majority of people who treat Colles' fractures will tell you that they use the Böhler plaster technique, yet in the Massage Departments throughout the country practically no recent Colles' fractures are now being seen, owing, so they say, to this same plaster technique. You should now be able to understand that the above statement is contradictory, for if, after the plaster has been applied, the patient is allowed to disappear until the time comes for its removal, the second principle of treatment has not been observed, for very few patients will use a damaged and plastered limb unless they are under supervision where they can be taught and encouraged to do so. Hence daily supervision by a trained individual is as essential if the plaster method is used as with any other method. This all-important point is too often overlooked, with resulting stiffness and disability as bad as with any of the older methods.

SPRAINS

One of the commonest and at the same time most important sprains is that of the ankle, which is really, of course, a sprain of the sub-taloid joint.

In this injury the ligament on the outer side of the ankle are torn and there is commonly a considerable amount of swelling due to the effusion of both blood and lymph. The immediate treatment is to elevate the limb and rest it completely for 24 to 48 hours to stop the hæmorrhage and effusion. The immobilisation of the damaged ligaments must now be continued until they are healed, which will take about fourteen days. For this purpose in mild cases strapping may be employed, but in the more severe cases plaster to the leg and foot is far more efficient. In either case the sub-taloid joint must be fixed in the position of rest, that is with the foot square to the leg, neither everted nor inverted. In the case of a plaster it should commence below the knee and completely enclose the foot, but have the toes free. The whole leg must now be actively used and exercised. This purpose is best served by encouraging the patient to walk as soon as the pain will allow. Even if the leg is in plaster the muscles of the leg and foot will actively contract, being stimulated to do so by the habitual walking reflexes. In this way absorption of the exudates will be encouraged, the swelling will disappear, stiffness will not occur, and the all too common condition known as " chronic sprain " will be prevented.

It is rather humiliating to remember that these principles, the importance of which we are only just recognising to-day, were fully realised many years ago by a well-known bonesetter of the day, who summed up the treatment of sprains in three words, namely, to rub, strap and use.

POST-OPERATIVE

The intentional injuries which are produced by operations upon the joints must be treated in the same way as accidental injuries. Operations on the knee for the removal of a semilunar cartilage afford a good example of this type of injury. In this operation, apart from anything that is done inside the joint, an incision is made in the capsule, and this must therefore be rested afterwards in order that it may heal properly. Movements of the joint cannot therefore be allowed until this has occurred. At the same time, however, the limb must be put to active use at the earliest possible moment after the operation. Quadriceps contractions with the straight knee should be commenced on the first day after the operation, and in most cases the patient may be allowed to get up and walk on the fifth or sixth day, movements of the knee being prevented by a firm bandage over wool. In this way atrophy of the quadriceps muscle—the most potent cause of continued effusion, is prevented, and in three weeks the knee will be fit for all ordinary use. Previously such cases were treated either by prolonged rest or else early movements, and both stiffness and persistent effusion were common sequelæ. The old controversy of early movements or no early movements was quite beside the point. Of course, there must be no movements of the damaged part but that does not imply that the whole limb must be rested. The question—Do you believe in early movement?—is still too frequently being asked in this connection, and the answer is : " No, but I do believe in early use."

I am anxious not to confuse the issues, which I have explained to you, by any further elaboration of detail, and will conclude by asking you always to consider carefully, whenever you are confronted by the treatment of one of these injuries, whether your treatment fulfils to the best possible advantage the two principles which we have discussed.

The Scientific Mind

A Paper read before the Guy's Hospital Physiological Society on 24th January, 1935, by H. B. O. Cardew, Esq.

MR. CHAIRMAN and GENTLEMEN,—This paper is to be concerned with the processes involved in thinking scientifically, and I propose to deal firstly with the subject of thought in general and secondly with scientific thought in particular.

The first part will deal with the science of logic.

As with many words in current use, " logic " is one where the underlying meaning or connotation remains frequently obscure, and I propose to define it before discussing it further.

Logic is the science which treats with the principles of valid thought.

Now, as a science, logic stands in a peculiar position, because it is the only science whose existence is usually ignored by those very people who are dealing with its subject matter, *i.e.*, by those who think. With other sciences it is considered indispensable to have an understanding of the main laws relating to them—for example, who could embark on a discussion on dynamics without some knowledge of Newton's Laws of Motion?

In the case of logic, however, everyone is presumed capable of reasoning correctly without any knowledge of the laws of thought.

Now, is this presumption justified? Is it not just as important to be sure of one's ground when reasoning, as when, as a scientist, one seeks to discover laws connecting external facts together into some system? Is it not really *more* important? For, whereas logic depends on no other sciences, all sciences are entirely dependent on logic to guarantee their results.

I feel that someone might reasonably say at this point, "But Mankind has managed to get along very nicely without any great knowledge of the laws of thought; indeed, many great scientists and thinkers probably never opened a book on logic, and yet were able to produce excellent results. And if these great thinkers could dispense with logic, why should not I?"

Now this objection is based on a misconception as to the functions of logic, but it is such a common misconception that I make no apology for correcting it.

The laws of thought are not laws in the sense of laws enacted by Parliament, which must be obeyed. Their only compulsion is in the sense of conviction which they carry to us.

In fact, they may be called those mental processes which, when followed, have proven, during the history of mankind, to arrive at correct conclusions, *i.e.*, conclusions in conformity with Nature, as we observe it.

But if they carry immediate conviction to us, why is it necessary that we should study them?

The justification for the study of logic is that a clear and accurate knowledge of anything is an advance on a mere hazy general familiarity with it. If one listens to a discussion between an expert scientist and an amateur, one is struck by difference of mental attitude. The amateur makes rash generalisations and constantly blunders, because he is not familiar with the fundamentals of the science; the expert, on the contrary, is constantly referring his speculations back to known sound principles.

In the same way the man who is trained in accurate thinking can immediately spot errors of reasoning, and is in consequence more sure of his ground.

Well, let us see then what logic has to offer us in the way of laws and principles to help us clarify our minds. May I draw an analogy at this point? Suppose some young man wants to compose a piece of music, and does not know how to proceed. He visits the great composer and asks to be taught the laws of music. I think the composer might well reply along these lines: "My dear young man, there *are* no laws of music. If you follow certain procedures, and produce works of genius like mine, you may call these procedures laws if you like, but I can assure you, if it takes my fancy, that I shall change these so-called laws to-morrow—and, anyway, you're an ass, for if you'd had any sense you'd have written your music first and have worried about the laws afterwards."

Now luckily, in the realm of logic we are better off, for though, like the musician, we may pick our laws at will, yet we can always—or nearly always—check up our results against the external reality around us, and thus make only those laws which lead to proper results. Aristotle was the first man to formulate laws, and so well did he do so that they have been altered hardly in any way in 2,400 years.

One might think, with such satisfactory laws, correct conclusions could be reached every time, and so, indeed, they could if the propositions on which the arguments were based were known to be true. All reasoning was found by Aristotle to be reducible to a form he called the syllogism, consisting of two propositions or premises, which lead inevitably to a correct conclusion if only the rules were followed. I cannot deal here with the laws of the syllogism, but they concern that part of logic which is called deduction, and which decides, given certain premises, what conclusions can be inferred.

A clear distinction must be made, however, between that part of logic which deals with the validity of *individual* propositions and that part which deals with the conclusions which may be drawn from the *linking together* of *various* propositions. The latter part—deduction—is quite independent of the former.

Hence, we see that it is necessary somehow to guarantee the validity of our premises before we can draw inferences from them, and this brings us to the more difficult part of logic, which includes induction and epistemology. Whereas Aristotle settled once and for all the laws of deductive logic, no one has done more yet than suggest possible methods of arriving with certainty at fundamental propositions, which are called postulates. Epistomology is the science of the validity of fundamental propositions, and epistomology has to call in the help of physiology and psychology to decide whether the concepts contained in propositions are valid in the sense that they are universally true.

Now, it will be quickly seen that propositions consist of the relationship of concepts, and by a concept I mean our idea of a thing.

If a physicist wants to state some general law as to the behaviour of light, in order to assure himself of the validity of his law he must first of all consult the physiologist to make sure that his measuring instrument, the eye, is giving him correct and consistent results. Next, if it were possible, he should assure himself that the images arriving on the retina were interpreted in the same manner by all observers, and, until he had made himself reasonably certain of these facts, he should not conduct his experiments to demonstrate his law.

Epistomology, metaphysics and critical philosophy in general have occupied themselves for thousands of years with these questions, trying to find fundamental postulates on which to build systems of knowledge. Their results have proved very disappointing, and some of us think that the philosopher's search for absolute certainty resembles the physicist's search for absolute motion in space, which, according to Einstein, by its very nature is indeterminable.

However, it is extremely important that, within the limits of application of a proposition, we should insure the maximum validity to our basic postulates, and, what is more, we should constantly return to check up our early generalisations to make sure that subsequent investigations have not invalidated them.

Leaving the abstruser study of concepts, let us turn to induction to see by what methods we arrive at true general propositions.

It is difficult for us to realise the immense sense of certitude enjoyed by us to-day compared with that of our ancestors, say five hundred years ago. Through hundreds of lines of investigation, propositions have been confirmed and reinforced, so as to give our basic postulates strong guarantees of certainty. Our ancestors, however, had little save their immediate experiences to help them form judgments. Most of their knowledge was passed on to them by word of mouth, and a vast proportion of it was quite inaccurate. The facts they *had* at their disposal were empirical, *i.e.*, they were isolated facts, unsupported by evidence from other sources.

To-day, although we use empirical methods in the arts, such as medicine, we look with great suspicion on them in scientific fields.

Now, some account must be given of the various methods used in connection with inductive reasoning. The search of the human mind for universal judgments may be expressed in another way, which perhaps will make clearer the problem.

We come in contact with the external world through our sense perceptions, but these, by themselves, are quite unable to put order into the stream of impressions which flow in.

The mind is that part of us which analyses the impressions, and sees the *real* nature of things, and the laws according to which they operate. It appreciates causality, and introduces order and meaning into what would otherwise be chaos.

Now, although the operations of the mind cannot be subdivided into sections, it has been found possible to form a general idea of how these operations take place.

The first step is *Observation*.

To let the stream of impressions flow in without selection would be useless. Having decided, one might say, what region of the external reality one wants to investigate, *i.e.*, what one set of facts appear to have some connection with another, one observes *only* these, and discards the remainder. Observation is not, therefore, just passively seeing —it is an active act of selection, and under its heading will come *Experiments*. Physics and Chemistry are the experimental sciences *par excellence*, and with experiments one can control the impressions arriving with great accuracy.

In other sciences, such as Astronomy, one has to wait until the facts are presented, as, *e.g.*, in eclipses. This applies also to medicine, where, although it is feasible sometimes to experiment, one is limited by moral considerations and by the impossibility of controlling one's experiments.

Before proceeding to the second part of inductive thought—that of offering an explanation for the phenomena observed—we must see to what fallacies we are liable in using observation.

The most prevalent is that of neglecting negative instances. This habit is so deeply engrained in mankind that I suspect no man is immune.

Bacon says in his " Novum Organum " : " It is a peculiar and perpetual error of the human understanding to be more moved and excited by affirmatives than negatives, whereas it ought, duly and regularly, to be impartial ; nay, in establishing any true axiom, the negative instance is the most powerful."

Most superstitions are based on this fallacy. The sailor who will not put to sea on a Friday, because of the ill-luck which would ensue, will support his belief by citing many cases of shipwreck following on Friday sailings, and no accounts of others who have sailing on Friday and come home safe and sound will shake his faith. He simply neglects all the negative instances.

Another fallacy of observation is one due simply to faulty memory.

Witnesses in the law courts are the best example of this ; the explanation is, I think, that it is always difficult to distinguish between what is really

perceived and what is inferred. Indeed, the conjurer owes his entire success to the exploitation of this fallacy.

We must now consider the next step in the mental processes of induction, *i.e.*, explanation.

Having selected, observed and analysed the phenomena under consideration, an hypothesis must be put forward to account for them. This is probably suggested by analogy.

Analogy is that process which enables us, from a resemblance of two sets of phenomena, to infer a probable similarity of cause, and it is useful only in so far as the resemblance is a real one, based on underlying identity of properties, and not superficial.

Thus, analogy may have degrees of usefulness ranging from worthlessness to one of extreme probability.

To a superficial observer the tail of a whale presents a close resemblance to that of a fish, and, by analogy, he might infer a similarity of structure between the two—a similarity which we know does not exist.

To give an example of the value of analogy in the formation of an hypothesis, I would remind you of the case of Darwin's principle of Natural Selection.

In his autobiography, Darwin tells how he recorded all the facts in any way connected with the variation of species in Nature and under domestication. " I soon found," he states, " that selection was the keystone of man's success in making useful races of plants and animals." From this conclusion and from the problems posed by Malthus's work, " On Population," he drew the analogy that the same processes were at work in Nature, and thus formulated his " Theory of Natural Selection."

To found an hypothesis is not enough, however. It must be referred back to the phenomena which it was put forward to explain, and must be shown to be operative in all those cases.

Only when this has been done is it customary to dignify an hypothesis with the name of " theory." Whereas the layman will accept almost any hypothesis without the slightest attempt at investigation, the scientific mind will do so only after prolonged inquiry.

Recently a Bill has been introduced into the House of Lords to recognise, as practitioners of medicine, osteopaths. The noble Lords have seen fit to pass this Bill through its first two readings. This is an excellent example of untrained minds accepting an hypothesis as fact, when the smallest investigation would show them the fallacious nature of the osteopathic postulates. Indeed, as the medical committee selected to investigate the matter pointed out, it was impossible to find any hypotheses common to the leading osteopaths to investigate.

I invite you to contrast with this attitude that of Isaac Newton, who, after proposing the hypothesis of gravitation, proceeded to check it up by referring it back to all the measurable movements of the planetary bodies. He found that the moon's motion was *slightly* less than it should have been according to his hypothesis. Thereupon he put the whole matter aside, and it was only sixteen years later that fresh measurements of the earth's size enabled him to accept his own hypothesis as correct.

Having discussed the *formation* of hypotheses, we must now consider some of the pitfalls which are liable to be encountered in dealing with these.

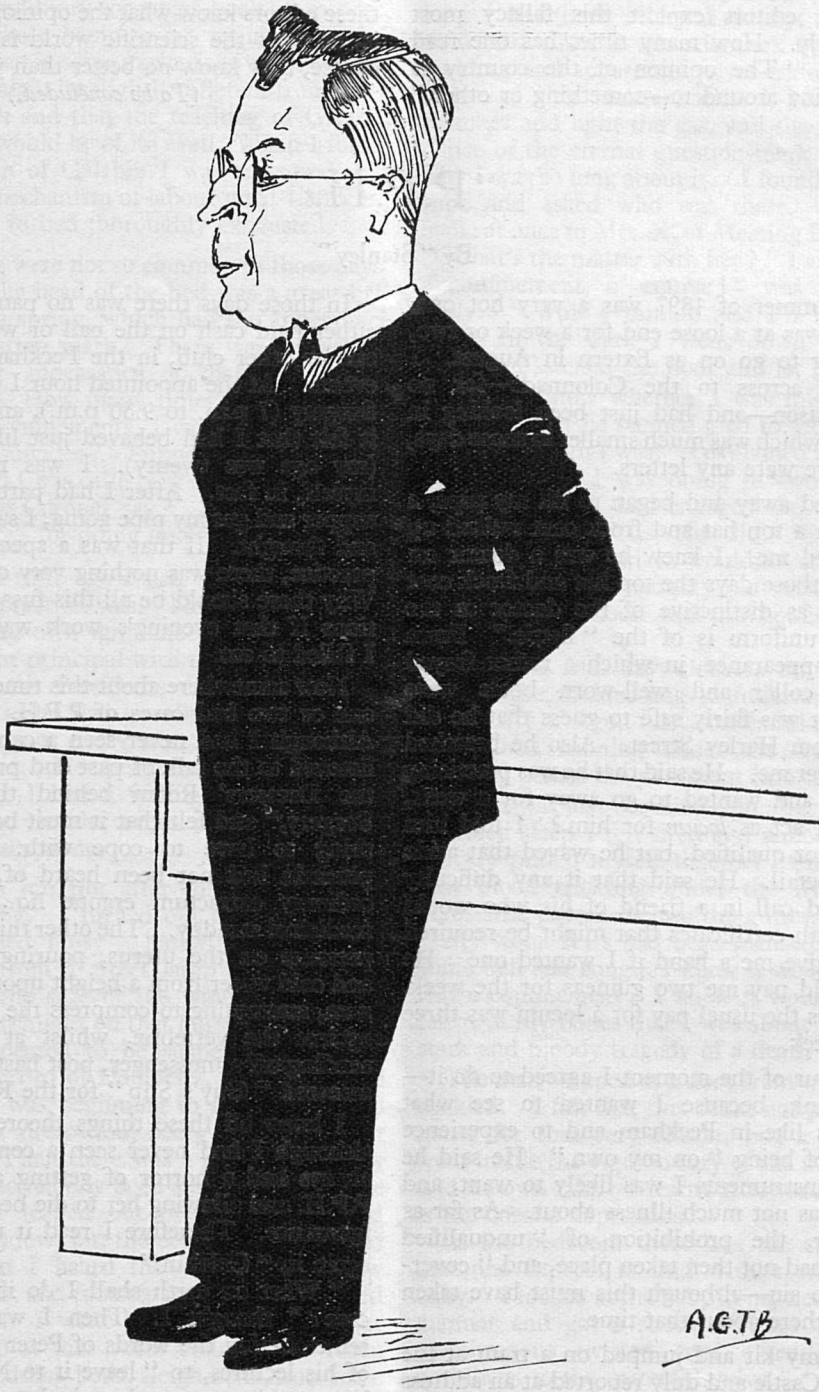
Firstly, then, an hypothesis is of no value whatsoever unless it is possible to check up on its truth or error. If I attribute the wave of influenza which swept across the world in 1918 to a castigation from the Almighty for humanity's sins in the war, the hypothesis may, or may not, be true. But since there is no way of checking its validity it must be disregarded *as* an hypothesis.

Secondly, the fact that no better hypothesis is available does not warrant one accepting one which otherwise would be unacceptable.

Medicine is particularly liable to attacks on this score. People note that medicine cannot explain or cure many of the illnesses encountered; they therefore accept, without demur, any theory which is put forward with sufficient vociferousness, and attack the medical practitioner for being a reactionary, because he is unwilling to accept the new theory. I feel the success of homœopaths, herbalists and the like can be accounted for largely on this basis.

Thirdly, is the fallacy of " *post hoc, ergo procter hoc.*" Because two events are connected in time does not prove that they have causal connection. One has to be especially careful of this when the first event was designed to produce the second. Bernard Shaw tried to incriminate the medical profession in the commission of this fallacy when he argued that the fact that vaccination preceded a decline in smallpox death-rate did not prove any causal connection between the two; personally he attributed the decline of smallpox to the introduction of incandescent gas lighting, which had preceded it by a few years.

Lastly is the fallacy of presuming too hastily the truth of some hypothesis and then, having forgotten to examine its validity, seeking its cause. " I wonder why it is," someone might say, " that babies always suck their thumbs rather than their


A.G.T.B

fingers," and then proceed to put forward an hypothesis to explain this interesting fact—a fact which, I am told, is quite untrue.

Newspaper editors exploit this fallacy most unscrupulously. How many times has one read in editorials, " The opinion of the country is slowly swinging around to—something or other," " The scientific world is becoming more and more idealistic . . ." and other such opinions. But pause a minute, incautious reader, for how do these editors know what the opinion of the country is, or what the scientific world is thinking? Of course, they know no better than you or I.

(*To be concluded.*)

"P.P.H."

By "Stanley"

THE summer of 1897 was a very hot one, and I was at a loose end for a week or two, waiting to go on as Extern in August. I had strolled across to the Colonnade—for no particular reason—and had just been looking in the window, which was much smaller in those days, to see if there were any letters.

As I turned away and began to fill my pipe, a gentleman in a top hat and frock coat walked up and addressed me. I knew he was a doctor on sight, for in those days the top hat and frock coat were almost as distinctive of the doctor as the policeman's uniform is of the " flattie." From his general appearance, in which a rather frayed and dingy collar and well-worn boots were prominent, it was fairly safe to guess that he did not come from Harley Street. Also he breathed alcohol all over me. He said that he was practising in Peckham and wanted to go away for a week, and would I act as *locum* for him? I told him that I was not qualified, but he waved that aside as a mere detail. He said that if any difficulty arose I could call in a friend of his who would sign any death certificates that might be required and would give me a hand if I wanted one. He said he would pay me two guineas for the week. In those days the usual pay for a locum was three guineas a week.

On the spur of the moment I agreed to do it—more, I think, because I wanted to see what practice was like in Peckham and to experience the feeling of being " on my own." He said he had all the instruments I was likely to want, and that there was not much illness about. As far as I remember, the prohibition of " unqualified assistants " had not then taken place, and " covering " was no sin—although this must have taken place somewhere about that time.

I packed my kit and jumped on a tram at the Elephant & Castle and duly reported at an address in Asylum Road. On my arrival the doctor showed me where his drugs were kept, gave me his visiting list and departed on his holiday.

In those days there was no panel, and patients either paid cash on the nail or were members of one or other club, in the Peckham district at all events. At the appointed hour I did the Evening Surgery (7 p.m. to 9.30 p.m.), and at the end of it felt that I had behaved just like a real doctor (my age was twenty). I was rather proud of myself, in fact. After I had partaken of a frugal supper and got my pipe going, I sat in an armchair and thought. If that was a specimen of general practice, there was nothing very difficult about it. Why there should be all this fuss about examinations if that evening's work was a fair sample I failed to see.

Now somewhere about this time there had been one or two bad cases of P.P.H. on the District. Although I had never seen a confinement, I had listened to the talk of past and present externs in the Dressers' Room behind the old " Front Surgery," and felt that it must be a pretty rotten thing to have to cope with. In those days pituitrin had not been heard of, and ergot, the ordinary extractum ergotæ liq., was the great medicinal standby. The other things were manual pressure on the uterus, pouring alternately hot and cold water from a height upon the bare abdomen, attempting to compress the abdominal aorta against the vertebræ, whilst at the same time sending off a messenger, post haste, with a blood-smeared " Guy's Slip " for the R.O.

I knew all these things theoretically, because, although I had never seen a confinement, I had always had a horror of getting a patient with a P.P.H. and allowing her to die because of my own ignorance. Therefore I read it up over and over again in " Galabin."

" What on earth shall I do if I get a midder case? " thought I. Then I was comforted by remembering the words of Peter Horrocks in one of his lectures, to " leave it to Nature and don't keep making repeated vaginal examinations."

" If there *is* a midder case, it's sure to come in the night," thought I, and the thought worried me

considerably. I had visions of headlines in the evening papers, " Peckham woman dies through ignorance of a Guy's student," and I hunted the doctor's meagre library for a text-book on midder, to look the whole business up again. I had a vague feeling that in some mysterious way Peckham confinements might be slightly different from those in the Borough and that the teaching of Galabin and Horrocks would be of no avail When I found an early edition of Galabin I was reassured, but I read up the mechanism of labour until 1.30 a.m., when I retired to bed thoroughly exhausted.

Electric bells were not so common in those days, and just over the head of the bed was a great bell hanging from a spring, which had the appearance of a huge question mark. There was something sinister in the appearance of that bell and it fascinated me. How many times had it rung in the night for confinements, I wondered? Had it rung for any suicides? Supposing there was a suicide now and I was called out and the man died; what would the Coroner say? Should I be sent down from Guy's for doing unqualified practice?

Only a short time ago I had felt what an easy thing general practice was. Now I was acutely conscious of my own ignorance, and inclined to credit my absent principal with the combined skill and ability of the Presidents of both the Royal Colleges because he had no obvious difficulty in dealing with any or every case that turned up—or so I imagined. Not being in possession of his magical L.S.A., I had a feeling of being naked and unprotected in the event of a professional hurricane coming along.

My thoughts ran riot after this fashion while I was undressing. I turned out the gas—one of the old-fashioned noisy " batswing " burners—and the light from a street lamp on the corner came through the side of the window-blind and shone like a searchlight on that horrible night-bell, which now appeared to be suspended over my head like the Sword of Damocles. As I watched it I thought it was beginning to move. I heard voices raised in altercation, beery altercation, out in the street. Then there was a scuffle and a cry of pain. Had somebody been stabbed outside the front door? I leaped out of bed and peered through the window, but the combatants were out of sight. Then I heard the voice of the Law moving them on, and footsteps and voices receded in the distance. I went back to bed, and once more looked up at that awful bell. Edgar Allen Poe wrote of wedding bells, sleigh bells, iron bells. How came he to forget about night bells, especially when they looked like a huge question mark indignantly demanding by what right I, an unqualified medical student, occupied the bed of a legally qualified and registered medical man?

And so I fell into a troubled slumber. How long I had been asleep I do not know; I was awakened while it was still dark by the clanging, jangling and apparently never-ending tintinnabulation of that sinister bell. I had to hunt for matches and light the gas, and the wild, macabre dance of the eternal question-mark seemed to ask why I was so long about it. I found the speaking-tube and asked who was there. " Would you come at once to Mrs. X, of Meeting House Lane? " " What's the matter with her? " I asked. " W'y, a confinement, o' course! " was the indignant reply. " Wait a minute and I'll let you in," I said. In the dark I went down those strange stairs, unfastened the door and let in Mr. X.

I don't know whether I was mistaken or not, but I thought he seemed glad to see me, youthful stranger though I was. I explained that the doctor was away and I was doing his work, and asked whether Mrs. X had engaged the doctor for her confinement. " Yus, she did. 'E only see 'er yesterday, and said it wouldn't come off for a week." And the naughty old man had told me only that afternoon that no confinements were imminent!

I rushed into my clothes, ran down stairs, opened the midder bag to make sure that there was plenty of ergot, fully convinced that we should find blood running under the front door and trickling across the pavement into the gutter.

Dawn was just breaking, but after my short and troubled sleep I felt tired and almost useless, but quickly pulled myself together at the thought of that blood trickling under the front door and across the pavement into the gutter.

My worst fears had been realised. That gruesome bell *had* rung; I knew it would. The case *was* a confinement; I knew it would be. And I felt it in my bones that I was about to witness the stark and bloody tragedy of a death from P.P.H.

The man stopped at a door from which no blood trickled. I felt that this could not possibly be his house for that very reason, but it was. As we went inside the vigorous cry of the new-born child told its own tale. I learnt afterwards that B.B.A. is the correct expression.

In the bedroom there was the state of affairs that one expects to find with a two-minute-old baby. I looked at the baby in my best professional manner and got a shock. There was a sort of membranous twisted cord extending from its umbilicus to the maternal vulva.

Heavens! I'd forgotten about that. It had to be tied and cut. This part of the business was safely negotiated, and then I remembered about

the placenta. It evidently had *not* come away. What about pulling on the cord, which seemed the obvious thing to do? This I did, but something felt as though it were tearing away, and I thought it unwise to continue. I had heard somewhere about inversion of the uterus. Might pulling on the cord do this? I thought it might.

Then the patient cried out with pain, and, to my horror, something which looked as though it might be the fundus of a uterus began to appear.

What ought I to do? Was this inversion of the uterus? Would there be P.P.H. and a dramatic death? While I was coming to a decision I thought it would be wisest to push this awful-looking thing back. Could it be the placenta? I had never seen one and did not know what they looked like. While holding it back I remembered having heard Peter Horrocks say that it was always best to leave things to Nature. I decided to do so, and refrained from holding this awful-looking mass back. In a couple of pains it was out on the bed; but so was a big blood clot. I put my hand on the abdomen and kneaded the uterus in what I understood was the correct manner. Suddenly it got *very hard* and a lot of blood was shot out.

Heavens! I knew it would happen! Here was the fulfilment of all my fears and premonitions. Here, in short, was the dreaded P.P.H.!

No R.O. to send for. Nothing but my own unaided efforts, I felt, could save this poor woman, the mother of six young children, from dying on my hands! I squeezed and kneaded and kneaded and squeezed until I was bathed in perspiration, and continued to hold my hand on that uterus for over two hours. When eventually I got back to the house, what with lack of sleep, mental anxiety, and sheer physical exertion, I was a wreck. The day was now well advanced, and I had a ravenous appetite. After eating a huge breakfast the world looked much brighter, and I had the satisfactory feeling that I had saved a woman's life.

A fortnight later I went on as Extern. As may be imagined, I was the old and experienced obstetrician, compared with these callow youths who had never done a confinement in their lives. One of my fellow-externs was not so callow either, for he had taken to medicine late in life and was already the possessor of a bald head and a beard.

* * * *

If this meets your eye, Fatty, you will remember Pa's Pills for Parturient Persons, and the episode of the Pickled Walnuts. But that is another story.

List of Periodicals

TAKEN IN THE WILLS LIBRARY AND THE VARIOUS DEPARTMENTAL LIBRARIES, TOGETHER WITH A GUIDE AS TO WHERE THEY CAN BE FOUND.

THE list contains all the more important journals which are housed in the Departmental Libraries whether current or stopped. Those noted as being in the Wills Library are nearly all current.

* Denotes that the current copy is received.

Abbreviations for the various departments are as follows:—

Anat.	Anatomy Department.
Bact.	Bacteriological Department.
Chem.	Chemistry Department.
Dent.	Dental Department.
Hunt.	Hunt Memorial Library (Cardiological Department).
Path.	Pathological Department.
Phar.	Pharmacological Department.
Phys.	Physiology Department.
W. L.	Wills Library.

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*W. L. Acta Medica Scandinavica. Vol. 53, 1920.

*W. L. American Dental Association, Journal. Vol. 18, 1931.

*Dent. American Dental Association, Journal. 1934 (Jan.).

*Hunt. American Heart Journal. Vol. 1, 1925.

*Anat. American Journal of Anatomy. Vol. 1, 1901.

*W. L. American Journal of Medical Sciences. Vol. 1, 1828.

*Path. American Journal of Pathology. Vol. 1.

*Phys. American Journal of Physiology. Vol. 1, 1898; Vol. 47, 1918; Vol. 110, 1934.

*W. L. American Medical Association, Journal. Vol. 59, 1912.

*Bact. American Microscopical Society, Transactions. Vol. 21, 1899.

*Anat. Anatomical Record. Vol. 1, 1906.

*Bact. Annales de l'Institut Pasteur. Vol. 1, 1887.

*W. L. Annals of Surgery. Vol. 25, 1897.

*W. L. Archives of Disease in Childhood. Vol. 1, 1926.

*W. L. Archives of Internal Medicine. Vol. 23, 1919.
Anat. Archiv für Anatomie. 1877-1903.
*W. L. Archiv für Pathologische Anatomie, etc. Vol. 13, 1858.
Path. Archives f. Experimental Pathology u. Pharmacy. Vol. 58; Vol. 101.
*W. L. Association of American Physicians, Transactions. Vol. 1, 1886.
*W. L. Australian and New Zealand Journal of Surgery. Vol. 1, 1931.
*Phys. Bio-Chemical Journal. Vol. 1, 1906.
*Bact. Biological Abstracts. Vol. 1, 1927.
*W. L. Brain. Vol. 1, 1878.
*W. L. Bristol Medico-Chirurgical Journal. Vol. 9, 1891.
*W. L. British Dental Journal. Vol. 10, 1889.
*Dent. British Dental Journal. 1931.
*W. L. British Medical Journal. 1853.
*W. L. British Journal of Dental Science. Vol. 74, 1929.
*Path. British Journal of Experimental Biology. Vol. 1, 1920.
*W. L. British Journal of Surgery. Vol. 1, 1913.
*W. L. British Journal of Venereal Disease. Vol. 1, 1925.
*Bact. Bulletin de l'Institut Pasteur. Vol. 13, 1915.
*Path. Bulletin de l'Institut Pasteur. Vol. 11, 1913.
*W. L. Canadian Medical Association, Journal. Vol. 16, 1926.
*Bact. Centralblatt für Bacteriologie: Originale, Vol. 7, 1890; Referate, Vol. 31, 1902; 2nd Abt., Vol. 43, 1915.
*Chem. Chemical Society of London: Abstracts and Transactions, 1871; Journal, 1871.
*Hunt. Clinical Science (*continuation of Heart*). Vol. 1, 1933-34.
*W. L. Current Researches in Anæsthesia and Analgesia. Vol. 9, 1930.
*W. L. Dental Cosmos. Vol. 40, 1898.
*Dent. Dental Cosmos. 1932.
W. L. Dental Digest. Vol. 22, 1916; Vol. 37, 1931.
*W. L. Dental Record. Vol. 19, 1899.
*Dent. Dental Record. 1933.
*Chem. Deutsche Chemische Gesellschaft, Berichte. 1895-96.
W. L. Dublin Journal of Medical Science. Vol. 20, 1842; Vol. 22, 1921 (4th ser.). (*Continued as Irish Journal of Medical Science.*)
Phys. Du Bois Raymond's Archiv de Physiologie. 1866-1908.
*Anat. Embryology, Contributions to. Number 1. (A few earlier numbers missing.)
*W. L. Ergebnisse der Inneren Medezin und Kinderheilkunde. Vol. 1, 1908.
*Path. Ergebnisse de Pathologie und Anatomie. Vol. 1.
Phys. Ergebnisse der Physiologie. Vol. 1, 1902; Vol. 23, 1923.
*W. L. Glasgow Medical Journal. Vol. 1, 1868.
*W. L. Guy's Hospital Reports. Vol. 1, 1836.
Hunt. Heart (*continued as Clinical Science*). Vol. 1, 1909; Vol. 16, 1932.
*W. L. Indian Journal of Medical Research (and Memoirs, 1924). Vol. 1, 1914.
*W. L. Irish Journal of Medical Science (*continuation of Dublin Journal of Medical Science*). Vol. 1, 1922.
Phys. Jahrsbericht der Physiologie. Vol. 1, 1872; Vol. 20, 1891; Vol. 1, 1892; Vol. 15, 1906.
*W. L. Japanese Journal of Medical Sciences. Vol. 1, 1927.
*W. L. Johns Hopkins Hospital, Bulletin. Vol. 1, 1889.
*W. L. Johns Hopkins Hospital, Reports Vol. 2, 1890.
*W. L. Journal of Anatomy (*continuation of Journal of Anatomy and Physiology*). Vol. 51, 1917.
*Anat. Journal of Anatomy (*continuation of Journal of Anatomy and Physiology*) Vol. 53, 1919.
W. L. Journal of Anatomy and Physiology. Vol. 1, 1867; Vol. 50, 1916 (3rd ser.). (*Continued as Journal of Anatomy.*)
*Bact. Journal of Bacteriology. Vol. 1, 1916.
*Phys. Journal of Biological Chemistry. Vol. 1, 1905; Vol. 103, 1933.
*W. L. Journal of Biological Chemistry. Vol. 104, 1934.
Path. Journal of the Cancer Research. Vol. 1-5.
Anat. Jour. of Comparative Neurology. Vol. 32; Vol. 36.
*Dent. Journal of Dental Research. 1933.
*W. L. Journal of Experimental Medicine. Vol. 58, 1933.
*Path. Journal of Experimental Medicine. Vol. 18.
*Bact. Journal of Hygiene. Vol. 33, 1933.
*Path. Journal of Infectious Diseases. Vol. 20.
*W. L. Journal of Laryngology and Otology. Vol. 46, 1931.
Anat. Journal of Morphology. Vol. 34; Vol. 38.

*W. L. Journal of Obstetrics and Gynæcology of the British Empire. Vol. 14, 1906; Vol. 25, 1914; Vol. 39, 1932.
*Bact. Journal of Pathology and Bacteriology. Vol. 1, 1892-93.
*Path. Journal of Pathology and Bacteriology. Vol. 1, 1892-93.
*Phar. Journal of Pharmacology and Experimental Therapeutics.
*Path. Journal d. Physiologie et Pathologie Générale. Vol. 16.
*Phys. Journal of Physiology. Vol. 1, 1878.
*W. L. Journal of Physiology. Vol. 1, 1878.
*W. L. Klinische Wochenschrift. Vol. 9, 1930.
*W. L. Lancet. 1884.
W. L. League of Nations, Health Organisation. 1923-27.
W. L. League of Nations, Health Organisation. Statistical Handbooks Series. Vol. 1, 1924; Vol. 4, 1925.
W. L. League of Nations, Monthly Epidemiological Report of the Health Section. Vol. 64, 1924; Vol. 86, 1926.
*W. L. League of Red Cross Societies, Monthly Bulletin. Vol. 1, 1920.
*W. L. Liverpool Medico-Chirurgical Journal. Vol. 1, 1881.
*W. L. Mayo Clinic Collected Papers. 1905.
*W. L. Medical Annual. 1883.
*W. L. Medical Journal of Australia. 1914.
*W. L. Medical Officer. 1909.
*W. L. Medical Press and Circular. Vol. 102 (Vol. 101, N.S.), 1916.
*W. L. Medical Research Council, Special Report Series. 1916.
*W. L. Medical Society of London, Transactions. Vol. 1 (N.S.), 1846.
*W. L. Medical Times and Long Island Medical Journal (*continuation of Long Island Medical Journal*). Vol. 59, 1931.
W. L. Long Island Medical Journal. Vol. 1, 1907; Vol. 24, 1930.
*W. L. Medicine. Vol. 5, 1926.
*W. L. Medicine. Vol. 11, 1930.
*W. L. Nature. Vol. 105, 1920.
*W. L. New York Academy of Medicine, Bulletin. Vol. 1 (2nd Ser.), 1925.
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*W. L. Royal Army Medical Corps, Journal. Vol. 1, 1903.
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*W. L. Royal Society of Medicine, Proceedings. Vol. 1, 1907.
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*W. L. Ulster Medical Journal. Vol. 1, 1932.
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Guy's Hospital Gazette

(ESTABLISHED 1872)

The Editor will, at all times, be glad to consider articles or sketches, provided that they are accompanied by the writer's name and address, not necessarily for publication. Authors who desire reprints of their papers should make their own arrangements with the Printers when they return their proofs. All contributions to be addressed to *The Editor*, who does not accept responsibility for the views expressed by contributors.

Nursing News

THE following Nurses passed the Final State Examination in May last. Their names have been entered in the General part of the State Register :—

I. Andrew
E. Blackman
B. Boyle
V. Briggs
M. Brown
B. Breen
G. M. Kindred
I. V. Llewhelin
G. Marley
G. M. Millett
E. I. M. Nevard
E. K. Ormrod
C. E. Cotton
J. Davey
E. Dove
D. I. Forster
A. M. Ferguson
J. M. Garratt
T. H. Howat
E. M. Houghton
P. Roberts
I. M. J. Rea-Clarke
B. H. Rigby
R. Rogerson
W. B. Reeves
D. Smith
D. M. Smith

Affiliated with the Cancer Hospital—

E. G. E. Jones
M. Williams

Sport

Lawn Tennis

Junior Cup Final

THIS match against Bart.'s was played on Wednesday, the 17th of July, at Honor Oak Part. Guy's played a weakened team, two regular members of the second team being unavailable and others being ineligible for Junior Cup Ties as they had been required as reserves for the First Team.

Bart.'s played a very well-balanced team, there being little to choose between their three pairs in the doubles.

K. Chartikavanji won his single in straight sets and A. N. Marley seemed well on the way to securing another point, but his brilliant game succumbed to the steadiness of his opponent, whose innocuous shots were made subtle by a cross wind. Further bad luck was experienced by an injury to R. L. V. Henderson, which considerably handicapped him both in the singles and the doubles later.

C. S. Darke gave us another point in the singles, and we finished 4—2 down.

The doubles were still more disastrous, and the match was lost by eight matches to five.

We congratulate Bart.'s on their success, which we understand has been delayed some time.

Guy's v. Professor T. B. Johnston's VI

THE Dean brought a very strong side to play us at Honor Oak Park on Sunday, July 28th. Partnered by Dr. H. G. N. Cooper, the Dean won a long match against K. Chartikavanji and R. L. V. Henderson, the first set being prolonged to eighteen games. The second set was just as close, but Dr. Cooper and the Dean won at 6/4. Guy's made the mistake of trying to keep the ball away from Cooper, only to find that the Dean's lobs and dipping shots gave his partner the chances he needed.

Dr. E. A. Knott and Mr. R. Brook were too steady for R. C. Hunt and C. S. Darke, and increased their team's lead.

Guy's only point in this round was obtained by C. A. Boucher and E. P. O. Watson, who defeated Dr. R. S. Bruce Pearson and Mr. N. L. Eckhoff.

A further two matches, secured by the Dean and Cooper and Bruce Pearson and Mr. Eckhoff, gave the Dean's VI a comfortable lead of four matches to two at tea-time. The match, however, was not yet over ; the Hospital, refreshed by tea, pulled up to four matches all. The result depended on the match between Dr. Bruce Pearson and Mr. Eckhoff and R. C. Hunt and C. S. Darke. The first set went to the former pair, but in the next the score was equalled. Breaking through the service early, Hunt and Darke led by 3/2, but lost Darke's service and then to Bruce-Pearson's and were 4/3 down. A long game on Hunt's service was also lost, but, fighting strongly, they saved a match point with a brilliant return from Hunt's racket and drew up to 4/5. However, Dr. Bruce-Pearson forced his side's victory against the service despite the loss of another match point.

This is the first victory the Dean's VI has had against the Hospital, and was well earned. The game is the most enjoyed of all our fixtures, and we look forward to its renewal next season.

E. P. O. W.

Rifle Club

THE Rifle Club this year has had a very pleasant, although not altogether successful, season. Our numbers have increased and several very promising shots have been " found." In the four-stage shoot for the Armitage Cup we

lost to St. Mary's—Guy's, the holders, being third, with St. Thomas's second.

On Wednesday, June 5th, we shot a miniature match with St. Mary's at the Marylebone Rifle Club, and we lost by four points—Guy's, 384; St. Mary's, 388.

On June 15th we shot a six-a-side match with the City Rifle Club, which we lost by nine points—a very creditable shoot, as the City Rifle Club possess some of the finest shots in the country. Scores: Guy's Rifle Club, 584; City Rifle Club, 593.

On Sunday, June 16th, the annual Staff *v.* Students Match took place at Bisley, which the Students won by a bare three points. There was a very good turn-out, and it was a pleasant social as well as serious afternoon.

The United Hospitals' Cup was shot for on Monday, July 15th, the result being—St. Thomas's (first), 597; St. Mary's (second), 591; Guy's, 587; Bart.'s; London.

C. Boswell, of the Biology Department, shot for England in the national team, and C. L. Stevens shot for India in the winning Kolapore Match team.

C. L. Stevens, E. Allen and G. E. Barnard are shooting individually in the Imperial Meeting from July 8th to 20th at Bisley, and we wish them the best of luck.

The Club have been promised that the Miniature Rifle Range in the Hospital basement "regions" will materialise in the early autumn. It is therefore hoped that we can arrange a series of matches to be shot during the winter, which would undoubtedly improve the standard of shooting in the Hospital—apart from increasing the numbers of the Club.

E. ALLEN,
Hon. Sec.

Hospital Information, etc.

Pass List

UNIVERSITY OF OXFORD.
June, 1935.
B.M., B.CH.

Medicine, Surgery and Obstetrics.

P. E. Cresswell — D. F. G. Moir

Pathology.

W. D. Brinton — R. Y. Taylor
T. E. Ooi — A. L. Young

Forensic Medicine and Hygiene.

P. C. Alexander.

SOCIETY OF APOTHECARIES OF LONDON.
L.M.S.S.A.
July, 1935.
A. Ponder.

UNIVERSITY OF LONDON.
July, 1935.
M.S.
BRANCH I.
Surgery.
T. F. Todd.

Papers by Guy's Men

J. Allan Berry. A case of Hyperinsulinism relieved by partial pancreatectomy. *Brit. Jour. Surg.*, 1935, xxiii, 51.

L. Cosin. Pseudo-myelomatous carcinomatosis. *Brit. Jour. Surg.*, 1935, xxiii, 110.

R. C. Brock. Post-typhoid chondritis with abscess formation. *Brit. Jour. Surg.*, 1935, xxiii, 231.

R. D. Passey and Another. The incidence of intra-thoracic neoplasia in the teaching hospitals of Great Britain, 1894-1928. *Quart. Jour. Med.*, 1935, iv (N.S.), 321.

Maurice Shaw. Simmond's disease (pituitary cachexia). *Proc. Roy. Soc. Med.*, 1935, xxviii, 1176, Clin. Sect.

H. W. Barber. (1) Pustular psoriasis, (2) Three cases of rosaceous tuberculide. *Proc. Roy. Soc. Med.*, 1935, xxviii, 1167, 1168, Sect. Dermat.

Louis Forman. Cicatricial alopecia of the scalp with keratosis pilaris. *Proc. Roy. Soc. Med.*, 1935, xxviii, 1174, Sect. Dermat.

George W. Bray. Some unusual examples of allergic reaction. *Practitioner*, 1935, cxxxiv, 610.

G. B. Dowling. Allergy in relation to diseases of the skin. *Practitioner*, 1935, cxxxiv, 627.

W. M. Mollison. Throat, nose and ear disease in relation to life assurance. *Medical Press*, 1935, cxci, 63.

Appointments

N. S. Plummer, Assistant Physician to the Charing Cross Hospital.

E. R. Boland, Assistant Physician to the Hospital of St. John and St. Elizabeth, London.

Changes of Address

F. Howard Pratt, 106, Harley Street, W.1. *Welbeck* 3525.

Births

BUNYAN.—On July 18th, 1935, at 20, Devonshire Place, to Helen, wife of John Bunyan, of Brunswick House, Sheerness—a son.

RICHMOND.—On July 8th, 1935, to Dr. and Mrs. J. Hamilton Richmond, of 6, Tettenhall Road, Wolverhampton—a daughter.

Death

CAMPBELL.—On July 4th, 1935, Henry Johnstone Campbell, F.R.C.P., J.P., of Dartmouth, formerly of Bradford, Yorks., aged 76.

EDS. { P. W. C.
M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX *17th August* 1935 *Number* 1228

PASSIM

IT is hoped to open Nuffield House in November, and applications are invited for the posts of Resident Medical Officer. These should be made to the Medical School Office before September 1st. There is to be a senior and junior appointment, which will be similar to that held by the Resident Medical Officer in Bright, but will differ in some respects. Both officers are to be appointed for six months and will be eligible for reappointment. Rooms, connected by telephone directly to Nuffield House, are to be provided in the College, and an allowance is to be made for meals which will enable the R.M.O. to eat where he pleases without the necessity of always dining within the Hospital. Remuneration for the Senior Resident is to be at the rate of £200 per annum, and for the Junior Resident at £150.

The type of case which the Resident Medical Officer will be called upon to deal with in Nuffield House will be in many ways different from those seen in Bright. The present limited accommodation for private patients and the long waiting list precludes the admission into Bright of any of the acute cases, medical or surgical. These have at the moment either to go elsewhere or to be admitted into a public ward. With seventy beds in Nuffield House it is hoped that some will always be available for emergencies. This extra accommodation will be greatly appreciated by the present House Officers, as it will relieve congestion in the wards as far as the "take-in" beds are concerned.

The value of these appointments is further enhanced by the opportunity that they will provide for observing the work of surgeons and physicians of other hospitals, for the treatment of the patients is not to be confined to members of our own Staff.

SINCE writing in our last number on the subject of Abyssinia, we have received a number of letters, some abusive, one of warning that to talk on such subjects is to play with fire, and one of congratulation. The only one that we consider worthy of publication we print elsewhere, and in this Mr. Layton accuses us of sneering, being unethical, cynically pessimistic and pettily sarcastic. There are, perhaps, some points in the letter which call for comment. Mr. Layton begins by remarking that we sometimes branch out from the subjects of medical affairs and hospital news to discussions on wider issues, and continues by saying that as long as we restrict these issues to the subject of peace such a policy is commendable. It may be an open question whether an organ such as the *Gazette* should have an editorial, but if there is to be one, to confine the topics for discussion to the two subjects of medicine and peace would seem a somewhat severe limitation. Everybody who has had the good fortune to be associated with Mr. Layton must know that he is one of the few members of a specialised profession who has any real feeling for language and an appreciation of the right use of words, but when he says that August 4th, 1914, was the "greatest day of our young lives," it is impossible not to wonder exactly what that adjective connotes.

If it be regrettable to review the facts of a case as one sees them, with a view to the truth rather than to what one would like to believe, then the article must be described as such. If it be pessimistic to give an unfavourable prognosis to a situation rather than to anticipate, against one's judgment, what one hopes will happen, then that impeachment also we must admit. If it be cynical to remark that in affairs of great magnitude (it being implied in the context that these are political affairs) ethical considerations practically do not arise, then we must stand accused of cynicism. But we would ask to be allowed to add that in this we were saying what we thought

did happen, not what we thought ought to happen, nor what might happen in the future. As to our contention that it seems likely that the League of Nations will emerge from its present difficulty without credit, time may or may not prove us wrong. When we said that if the League failed on this occasion it seemed that the final evidence would be produced that the League was dead, we agree that there may be a difference of opinion on the meaning of the word "failure." Of Mr. Layton's final invitation with regard to our ethics, to "come over into Macedonia and be helped," may we say, with all sincerity, that we hope some time to avail ourselves. But at the moment we are recovering our breath, for the letter comes (if we may use a vulgarism prevalent in the Hospital vernacular a year or so ago) as a "slap in the belly with a wet fish."

▭

IT has been decided to declare the new ground and recent additions to the pavilion at Honor Oak Park officially open on Wednesday, October 9th. After the opening ceremony a fixture of special interest has been arranged between the Hospital side and a team got together by Mr. Windsor Lewis.

In the evening there will be a dinner at Grosvenor House. Officials from other London clubs are being invited, and it is hoped that, combining as it does the annual Rugger Club Dinner and a commemoration of the opening of the new ground, as many members as possible of the Staff and of other branches of the Clubs' Union will be able to attend.

We feel that the Rugger Club and Clubs' Union deserve every congratulation on having arranged for the occasion so happy a choice of fixtures and a dinner at which all connected with Guy's rugger will have an opportunity to foregather.

Tickets for the dinner, which are 12*s.* 6*d.*, will shortly be available on application from the Secretary, Mr. R. C. S. Dick.

▭

ON Thursday, the 15th, while we are going to press, the Residents' Going-Off Dinner is to be held, and we congratulate on their election for the forthcoming three months the following gentlemen :—

Mr. P. C. Alexander, President of the Residents;

Mr. A. M. G. Campbell, Vice-President;

Mr. M. R. Kark, Treasurer.

We congratulate also Mr. M. R. Kark on winning the Charles Oldham Prize in Ophthalmology and Mr. E. Sayle on winning the Charles Oldham Prize for Neurological Aspects of Ophthalmology.

▭

WE congratulate the following gentlemen on their appointments :—

House Physicians—
To Dr. Poulton—Mr. C. A. Boucher.
To Dr. Ryle—Mr. J. R. Dickinson.

House Surgeons—
To Mr. Davies-Colley—Mr. D. A. Davies.
To Mr. Slesinger—Mr. F. I. Evans.

Obstetric Resident—
To Mr. McNair and Mr. Cook—Mr. H. Cameron.

Ophthalmic House Surgeon—
To Mr. Morgan and Mr. Law—Mr. B. C. Morton-Palmer.

House Surgeon to Ear, Nose and Throat Department—
To Mr. Layton—Mr. J. E. Elliott.

House Surgeon to the Orthopædic and Genito-Urinary Department—
Mr. P. W. G. Baxter.

Out-Patient Officers—
Mr. R. W. Cope.
Mr. J. R. Forbes.
Mr. J. E. Giesen.
Mr. W. N. Mann.

Assistant House Surgeons—
To Mr. Ogilvie—Mr. J. H. Mayer.
To Mr. Doherty—Mr. R. McDonald.
To Mr. Grant Massie—Mr. J. E. Spalding.
To Mr. Eckhoff—Mr. J. A. J. Hammond.

Obituary

DAVID RICE, M.D. (Brux.), M.R.C.S. (Eng.), D.P.H.

(*Reprinted from the "Lancet"*)

WE regret to record the death of Dr. David Rice, which occurred on Wednesday, July 31st, at Lower Hellesdon, where he had been lying ill for some three months. He was the son of the Reverend C. H. Rice, rector of Cheam, and was educated at St. Columba's College, Dublin, and Guy's Hospital.

He took the English double qualification in 1898 and immediately started on his successful career as an alienist. He was for a time attached

to the Bethlem Royal Hospital, and from 1899 to 1907 he was medical officer at Staffordshire County Asylum. He was later appointed medical superintendent of the Hellesdon Hospital, Norwich, a post which he held for 27 years, acting also as medical adviser to the Norfolk Committee for the Care of the Mentally Defective.

He was particularly well read in his subject, was up to date in his views, and a capable administrator, so that he gained rightly a high reputation for his achievement at Hellesdon. Outside his professional work Dr. Rice was a great lover of music, while he had been a prominent cricketer. He leaves a widow, two sons and a daughter.

Some Cases of Papillœdema

A Clinical Lecture delivered at Guy's Hospital by O. G. Morgan, Esq., M.Ch.

THE recognition of a case of papillœdema is not always easy, especially in the early stages. There are certain important points in the technique of the examination which are worthy of recapitulation. In the first place it is essential to have a reliable ophthalmoscope, and the less experienced the observer the better should be his instrument. The unskilled observer hesitates to question his ophthalmoscope, and at once concludes that it is his fault if he fails to see clearly; a few unnecessary reflexes will completely baffle him. In the second place, a dilated pupil on both sides is needed before accurate measurements of the retinal vessels can be made. Homatropine and cocaine, 2 per cent. of each, is quite safe if oily eserine, $\frac{1}{2}$ per cent., is instilled afterwards. In the third place, a comparison of the two sides must be made as the normal disc varies so much in the haziness of its margin, its colour, and the apparent size of the vessels, etc.

The normal disc margin is defined in its whole circumference, but it is usually more definite on the temporal side, where fewer fibres cross it than on the nasal side, where there is a considerable thickness of the nerve fibre layer. The nasal side is consequently more pink, as minute capillaries are present in greater numbers. There is usually a physiological cup of variable size out of which the retinal vessels emerge to break up into their branches, which pass over the disc margin. The base of this hollow may be stippled if the lamina cribrosa is visible.

Normally all the retinal vessels are on the same level, and if one vessel on the disc margin be focussed with the highest + lens in the sight hole with which it is visible, then any other vessel running *in the same direction* just outside the disc will be in focus with the same + lens. A comparison between a vessel running vertically and one running horizontally will measure the patient's astigmatism and may show many dioptres of difference in the reading.

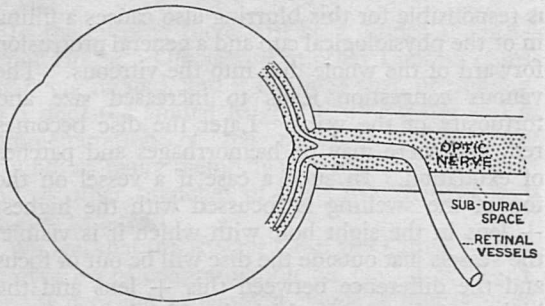
The intracranial subdural space is continuous with the subdural space round the optic nerve, and so the pressure is the same in each. The retinal vessels and attendant lymphatics cross the subdural space which surrounds the optic nerve and so are affected by any change in pressure in this space—the results of a rise being œdema and venous congestion at the nerve head.

In an early case of papillœdema there may be only a suspicious blurring of the disc margin and nothing else, and such a case needs frequent watching to note the gradual evolution into a definite and unmistakable swelling. In such a case the disc edge is not seen, and the œdema which is responsible for this blurring also causes a filling in of the physiological cup and a general protrusion forward of the whole disc into the vitreous. The venous congestion leads to increased size and tortuosity of the veins. Later the disc becomes red, and there may be hæmorrhages and patches of exudation. In such a case if a vessel on the top of the swelling is focussed with the highest + lens in the sight hole with which it is visible, the vessels just outside the disc will be out of focus and the difference between this + lens and the highest + lens with which these latter vessels are in focus gives the measurements of the swelling in dioptres. A diagnosis of papillœdema does not necessarily mean a diagnosis of cerebral tumour, and three cases which have recently come up to Out-Patients are of interest in this connection.

The first is that of a girl of 17, who noticed rapidly increasing dimness of vision in one eye with pain on moving the eye and pain on pressure on the eyeball. She had a definite degree of œdema of the disc with slight venous engorgement, but no measurable swelling. The vision deteriorated until she had no perception of light in that eye. The other disc was at this time quite normal, but after a fortnight this disc also began to show some œdema and vision began to fail. As the second eye became worse the first eye began to recover, and the end result was that both eyes recovered to 6/9 vision with a mild degree of optic atrophy. There were never any cerebral symptoms, and the condition was obviously one

affecting the optic nerve heads only—a case of bilateral retrobulbar neuritis, but a neuritis affecting the optic nerves so near the eyeball that the discs showed œdema, venous stasis and so much pressure on the nerve fibres that the impulses could not pass. The probable diagnosis in this case, in spite of the absence of other signs in the central nervous system, was disseminated sclerosis, and it is well known that, if cases of undoubted disseminated sclerosis are investigated, the history shows that the first symptoms are ocular, *i.e.*, a transient unilateral or bilateral blindness—diplopia or ptosis. In the majority of cases the patch of sclerosis in the optic nerve is not near the disc, and so an optic neuritis is rare.

The second case was that of a man of 55 who came up complaining of diminution of visual acuity in one eye, associated with headaches and vomiting. On investigation, he had a definite œdema of the disc in this eye with loss of definition of the edge and a filling in of the physiological cup. The disc on the other side showed a similar condition, but the change was not so marked. In addition, in both eyes there was marked œdema of the surrounding retina with localised areas of



exudation round the disc and along the line of the retinal vessels; white lines radiated between the disc and the macula, giving the appearance of a star figure. On examining the fundus more carefully it was noted that the retinal arteries were very narrow and the veins tortuous and dark and hidden in places by the retinal œdema. The veins were markedly indented by the arteries where these crossed them. The main feature here was the retinal arterio-sclerosis, the œdema of the disc being secondary. The case on investigation proved to be one of essential hyperpiesia. The association of the symptoms of headache and vomiting with the signs of œdema of the discs might easily lead to a suspicion of cerebral tumour, but the absence of measurable swelling and the marked retinal vessel changes suggested a different diagnosis.

The third case was that of a young man of 27 who complained of headaches and vomiting in attacks and an occasional diplopia. His visual acuity in each eye was normal, yet on examining his fundus a marked œdema of the discs could be seen. On measurement, a swelling of 4 dioptres was noted on one side and 5 dioptres on the other. Investigation showed a high C.S.F. tension and other signs of intracranial tumour. The main difference in the discs in this case as compared with those in the other two was in the degree of swelling, and it is safe to say that where there is more than 2 or 3 dioptres of swelling the diagnosis is almost certainly increased intracranial tension, and so, in most cases, cerebral tumour.

These three cases illustrate another important point in nomenclature. In the first case the œdema was definitely inflammatory, as it would be in a syphilitic or tuberculous affection of the optic nerve, and so was an optic neuritis. In the second the œdema was associated with degenerative or toxic changes in the retina due to interference with the blood supply, and in the third the swelling was the result of physical obstruction to the lymphatic and venous return, with no suggestion of any inflammatory or degenerative element—a condition of papillœdema.

The Scientific Mind

A Paper read before the Guy's Hospital Physiological Society on 24th January, 1935, by H. B. O. Cardew, Esq.

(*concluded*)

PART II

WE must now leave the fields of induction and deduction and turn for a minute to a most important part of logic which is really common to both, but must be considered independently, *i.e.*, the subjects of words. Locke once said that he thought it probable that more confusion of mind had resulted from words than clarification, and anybody who has analysed the content of an argument between two people will have noted how frequently the disagreement is based on a different interpretation of the meanings of quite common words. Socrates had such an overwhelming understanding of this difficulty that he must have driven his satellites nearly mad in his attempts to make them define what they meant

by common words like justice, beauty, government, etc.

It is not necessary, of course, to define a word in order to grasp its connotation. Long before Mr. Borodaile defined a dog-fish as a triploblastic metozoa coelomate with a large coelomic perivisceral cavity, small boys living by the sea could tell a dog-fish when they saw one.

It would not be necessary, then, to define words at all if our understanding of them coincided exactly, but unfortunately it does not. The content of a word has as many variations as there are people in the world. Consider the word " dog " and the mental picture aroused by the word in the minds of, let us say, a dog-breeder, an old lady, a biologist, an esquimaux, and an anti-vivisectionist.

Since all these variations of meaning exist, it is necessary to find some common ground on which to remain while discussing objects, and with this in view the logicians suggested that words should be divided firstly as regards their extension, and secondly regarding their intention. The first process consists of division and classification—*most* important as far as science is concerned, but with which I cannot deal here.

The second process deals with definition as we *ordinarily* know it, and I will here give, as shortly as possible, some rules for definition.

To define is not to state the meaning of something, but rather to set limits to the application of a word. Thus, to elaborate all the qualities connoted by the word " dog " would take pages to do, but one can rapidly set limits to its use by stating in what class of objects it lies, *i.e.*, mammals, and then by stating what features distinguish it from other members of the class. This is called definition *per genus ad differentiam*, and is the common method used in logic. However, there is no fixed rule for this procedure. Sometimes it is more convenient to define an object by stating how it came into being, *e.g.*, water is the substance produced when two parts of hydrogen react with one of oxygen.

One must be careful not to commit certain errors. A definition must not contain the word defined, or a synonym of it. " Life " cannot be defined as " the sum of the vital processes," since vital is only another way of saying " appertaining to life."

Neither should figurative or obscure language be used.

To define a net as " a reticulated texture with large interstices or meshes " is an example of this fallacy.

Further, there are certain words which are indefinable. These are said to be *sui generis* because it is impossible to relate them to a higher genus. Words such as " space," " time," " life," cannot be referred to more general concepts and are indefinable.

The practical point to remember as far as definition is concerned is that a word should have the same meaning in one's mind when used in a succession of inferences.

I will remind you of the following dialogue :—

" When I use a word," Humpty Dumpty said in rather a scornful tone, " it means just what I choose it to mean, neither more nor less."

" The question is," said Alice, " whether you *can* make words mean so many different things."

" The question is," said Humpty Dumpty, " which is to be master—that's all."

Having rapidly covered the main divisions of thought, we must now consider in what relationship they stand to one another, and whether it would be possible to use one independently of another.

It will soon be appreciated that thought is a process which will not admit of separation into rigid compartments.

The man who is conducting a series of scientific experiments, although apparently following purely inductive methods, is constantly and, probably, unconsciously, taking as proven large chunks of information. If he is using a gas analysis apparatus, he presumes the validity of Boyle's law, and is therefore simultaneously using the deductive method.

Study any well-reasoned argument on some topic, and one finds that it consists of a stream of ideas in which the direction is constantly shifting from the general to the particular, and back to the general. The flow of thought cannot be canalised into one-way streams. The mind is, perhaps, better thought of as a constant flux moving backwards and forwards, never advancing beyond its potential boundaries, but, by its own movement, clarifying its substance by dropping to the bottom the sediment of error as it moves.

In the untrained and slovenly mind, error will remain suspended, and the light of truth will not penetrate.

If, then, the mind operates as I have portrayed, can it be said that an individual, or an epoch, may err in the over-use of one or the other of our methods ? I think that this question may best be answered by giving a rapid historical survey of the thought of mankind—in an endeavour to find the trends of thought of different periods of history.

Let us start with the Greek civilisation. During those two hundred years of 500—300 B.C. there lived in Greece a collection of men of genius which no other two hundred years in history has yet rivalled.

What characterised *their* mental make-up? It is always said that the Greek thought was primarily deductive, and indeed this is true. Even their scientists were theoretical in their methods. They started from what they considered self-evident axioms, and no practical experiments were considered necessary to justify these axioms. Indeed, manual work was considered *infra dig.* for the intellectual Greek, and this fact may account in some measure for the very small volume of experimental evidence accumulated by them. Mathematics, theology and philosophy were their chief provinces, and although they made some remarkable discoveries in the realms of physics and astronomy (essentially inductive sciences), their genius expressed itself principally in the analytic, and not the synthetic, fields.

The Arabs were more experimental than the Greeks, especially in chemistry. They were largely instrumental in carrying on the tradition of civilisation through the Dark Ages. Their intellectual defect was the opposite of the Greeks—they sought detached facts rather than general principles, and had not the power of inferring general laws from the facts they had discovered.

Nevertheless in Europe, until the 14th century, thought was cramped, and almost exclusively deductive. All truth was discoverable, it was said, from Aristotle and the Ancients, and from the Scriptures.

The idea of trying experiments to discover new truths was severely frowned on. Gallileo tried to break away from this tradition, with what results we know.

Let me quote a passage from the Inquisition's sentence on him :—

" The proposition that the earth is not the centre of the world, nor immovable, but that it moves and also with a diurnal action is absurd, philosophically false, and formally heretical, because it is expressly contrary to the Scriptures."

Nevertheless, the conflict between Gallileo and the Inquisition is not merely the conflict between free thought and bigotry, or between science and religion, it is the conflict between the spirit of induction and the spirit of deduction. In the realms of deduction, many valuable contributions were made by the scholastics, and these must not be lightly put aside.

Gallileo, however, opened the door which enabled us to use the inductive method, and he was soon followed by Kepler, Leibnitz, Bacon, Newton, and others who set this method on the sure foundation on which we have been able to build ever since.

But many false trails have been followed by the inaccurate use of inductive methods. One example—phrenology—swept Europe a hundred years ago, and its success can be laid to the too ready acceptance of badly conducted experiments. I strongly suspect that many of the modern psychological theories are based on foundations not more sure than those of phrenology.

Curiously enough, the recent tendency has been to discount the inductive method in favour of deduction again.

Communism in Russia and National Socialism in Germany are two examples of stressing the deductive method. But, apart from political systems, people are tending to become rather irritated at the lack of positive conclusions of science. No answer is yet forthcoming to the Lamarck-Darwinian contest after three-quarters of a century of dispute. In astral physics, the shape and dimensions of the universe have been changed too frequently for most people's comfort.

In psychology the war rages just as strongly, and in almost any science the differences of opinion are more marked to-day than they were fifty years ago. Can these divergences of opinion among scientific men be said to denote a failure of science and of its methods? Many would have us believe so, but I believe that it is not science which has erred, but rather that people's idea of the functions of science are false.

Now, what is science, and what distinguishes scientific thought from any other kind of thought? I cannot think of any better way of putting it than to say that science is the process of exploring the external world. All thought which perceives true external relationships is scientific, as opposed to thought which merely notes isolated events and does not seek for general principles connecting these events. The quality, then, which distinguishes the scientific mind—or rather distinguishes that part of the mind which is scientific from that which is not—is the ability to simplify our experience and to make it significant.

The process of simplification consists of discovering laws which will embrace larger and yet larger parts of the whole of reality. But the universe is horribly complex, and we have not as yet become very adept at this process of simplification, and consequently the laws we discover are rarely more than good approximations of truths, which hold good only so long as we confine our laws to the provinces in which they were discovered.

When new laws are discovered which appear to invalidate their predecessors, it cannot be said that the old laws were false and the new ones true.

Rather are the new ones better approximations than the old. The laws of gravitation and relativity are two cases in point. Relativity is a closer

approximation to the truth; in other words, it has embraced a rather larger chunk of that great complex—our universe.

Would any true biologist say categorically that Lamarck was right and Darwin wrong, or *vice versa*? I think not.

Some people regret—and many rejoice at—the chaotic state in which they see science to-day, but I venture to say that the chaos is largely illusory.

Patience is necessary to resolve apparent discrepancies, but I do not doubt that, given time, we shall arrive at fresh laws which will resolve our *old* difficulties—perhaps provide new ones, but, in any case, take us one step further on our road to the goal we seek.

Some Physiological Reactions to Music

A Paper read before the Physiological Society of Guy's Hospital by J. R. Miles, Esq., and C. R. Tilly, Esq.

MR. CHAIRMAN and GENTLEMEN,—The object of this paper is to illustrate physiological changes produced by music, to describe experiments by which these changes have been investigated, and to discuss the mechanisms by which they are produced. Some of these changes are matters of common experience, and it was the appreciation of one of them which led us to the consideration of the facts described in this paper. We found that many people on hearing stimulating music such as that produced by a military band, perceived a sensation of "goose-flesh," which was in many cases so intense as to be unpleasant. This sensation is accepted to be due to the contraction of the erectores pili muscles, which in turn is due to a general sympathetic stimulation, and one would expect also to find all the usual concomitant changes to a greater or lesser degree.

That music can exert an influence on the physiological functions of man is borne out by even a brief survey of the history of the art itself. Music was first used as a stimulus for physiological activity expressed in the form of dancing; it has been used from time immemorial to stimulate or soothe the emotions, as evidenced by the invariable inclusion of professional minstrels at banquets and state functions, even as far back as the time of the Pharaohs. Evidence which most people have at some time appreciated is the stimulating effect of a military band, when a period of prolonged muscular activity, such as a route march, has to be undertaken.

The considerations of these facts led us to attempt an exact investigation into the nature of the physiological changes coincident upon the appreciation of music.

Owing to the fact that any experiments have to be carried out by clinical rather than laboratory methods, the physiological changes open to investigation are necessarily limited, and we, in common with other investigators, have accordingly confined ourselves to a study of changes in respiration and blood pressure.

In 1914, Vincent, Cameron and Armes, investigating changes in blood pressure in this respect, came to the following conclusions. They reported that quiet uneventful compositions induced a fall in blood pressure, whereas compositions containing changes of key, abrupt *crescendi* and changes of *tempo* gave an increase. They said, further, that if the interest of a musical person were intensely aroused by a composition, there might be a fall, but that fall was due to altered respiration. In brief, they concluded that musical interest was followed by a rise in blood pressure, and lack of interest by a fall.

In 1929, Swale Vincent and Thompson, commenting upon these experiments, made the following observations: "In the present series of experiments we have not found that increase of emotional effect is necessarily concomitant with a rise in blood pressure, but it seems to be that sometimes there will be a rise, and sometimes a fall, but either one or other of these occur, whatever was the initial height of the blood pressure." In performing investigations into the effect of music on blood pressure in man, these experimenters subdivided their subjects into three main groups, which they classified respectively as Musical, Moderately Musical, and Non-Musical. In the musical group they found that an increase of volume of sound led to a fall in blood pressure, but that decreased volume gave no corresponding rise. On the moderately musical group the effects were similar, but to a lesser extent. On the non-musical group no effect was observed. As regards the incidence of melody, in the first group there was a rise of blood pressure, in the second group a rise of lesser degree, and in the third group no effect. In the first group they found that a change to high pitch led to a rise, which was again echoed in less degree by the second group, and not observed at all in the third. Change of rhythm,

by which was presumably meant change of tempo, had no effect in the first and third groups, but in the second an increase led to a rise, and a decrease to a fall, in blood pressure. They observed also that in the first group the commencement of music was invariably followed by a fall in blood pressure, except in the case of vocal music, which gave a rise.

For the continuous recording of blood pressure in their experiments, Thompson devised an apparatus consisting of a water manometer, and an arm-band designed to transmit changes of arterial pressure over long periods without causing venous obstruction. This is the apparatus that we have used in our experiments. In addition to blood pressure changes we attempted to record respiratory changes, for which we employed a Marey's tambour, which enabled them to be recorded on the same drum as those of the blood pressure.

To ensure as little distraction as possible to the subject, he or she was seated comfortably in a darkened room; the apparatus was fixed on and the clock of the drum and the gramophone motor run until respiratory and blood pressure recordings had reached a steady level. The record was then played, and at the conclusion of the music the same technique was observed. Thus we ensured as far as possible that anticipatory changes were eliminated. As a further control for our experiments a certain number of subjects was hypnotised, and their reactions to music in this state were recorded. It was hoped by this means that by suggestion, outside sounds could be eliminated from the subject's consciousness and a complete concentration on the music obtained, and by this means we could gain a true report of his subjective sensations unhampered by the diffidence and confusion which we often encountered with subjects in the conscious state. From the results obtained we believe that our hopes in this direction were justified, and many of the findings which are later described were obtained from subjects in this state. In controlled experiments with the same subjects listening to the same music in both the conscious and hypnotic states, it was found that the recorded results were qualitatively exactly the same, differing only in the respect that the excursions were greater with subjects in hypnosis.

In the classification of our results we have made no attempt to subdivide our subject into definitely Musical, Moderately Musical or Non-Musical groups, as we feel that any such classification would seem to be dependent upon the results obtained, and our observations have shown no such clearly defined sub-divisions. We have, however, sub-divided our musical stimuli into two groups, namely :—

1. Direct stimuli—that is to say, physical changes as of volume, pitch and tempo.

2. Indirect stimuli—that is to say, changes involving appreciation of the music by the subject.

For appreciation we have accepted Thompson's definition, " the intelligent comprehension of the aims of the composer coupled with an enjoyment of the total effect produced."

In the case of respiration we found that both these stimuli had definite effects, provided the subject was interested in the music heard. Changes in respiration can be regarded in two categories: changes in amplitude and changes in rate. It is found that these two changes may often go hand in hand, an increase in rate being accompanied by increase in amplitude, in which case the total air intake is increased. From our results we have not sufficient data to enable us to consider these changes separately, but we find that total air intake is increased proportionately with tempo; with tempo and volume, but not with volume alone. We have no evidence that changes of pitch alone, unaccompanied by changes in tempo or volume, affect the respiratory rate in any way. Thus we infer that change of tempo is the chief predisposing cause of respiratory change, to which changes of pitch and volume are adjuvant. An increased air intake has to be compensated. Since the subject has no opportunity for utilising the

A.—Commencement.
B.—Increase in Tempo.
C.—Return to original melody.
D. and E.—Suspense.
F.—Fall in volume.
G.—Return to original melody.
H.—End of music.

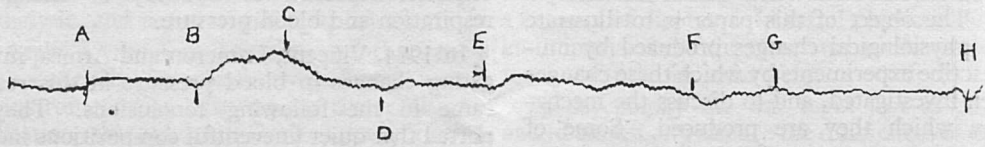


Fig. 1.
Blood-Pressure Recording. (Prelude in D♭ Chopin).

extra air for oxydation, one would expect a compensatory reduction of air intake on the removal of the stimulus. This is found to be the case; indeed in one subject, after severe hyperpnœa induced by dance music in exceedingly rapid tempo, a period of actual apnœa was observed. That this is a normal physiological response is well evidenced by the fact that any hyperpnœa induced without corresponding increase in metabolic rate produces a state of alkalinity in the blood to which the respiratory centre immediately responds. Not only does reduced air intake occur as a compensatory phenomenon after induced hyperpnœa, but it does occur spontaneously as a direct reaction to musical stimulus. This is shown when a feeling of suspense or of restfulness is induced by the interpretation by the subject of the composer's effects. In one striking case, when the subject in hypnosis told us that the feeling produced was one of expectancy and suspense, the respiratory rate in a given time fell from ten to six.

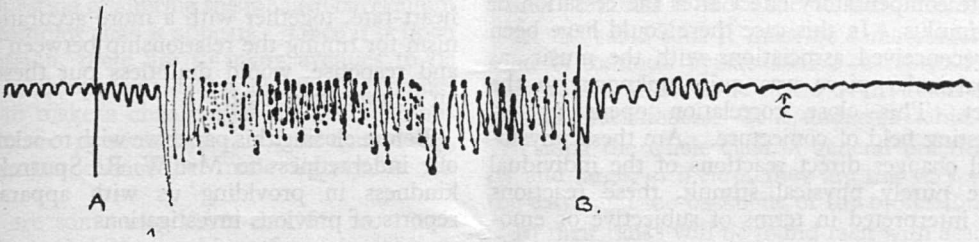


Fig. 2.—Respiration.

We have now to consider changes produced in blood pressure. As in respiration we again divide our stimuli into two divisions, physical and psychical. In this case we found that changes of volume alone produced alterations in blood pressure—an increase of volume causing an increase in blood pressure and *vice versa*. Increase of tempo caused a proportionate increase of blood pressure, and again we have no evidence that alterations in pitch alone produced any effect.

Of the psychical stimuli, we found that the commencement of music was marked by a rise in blood pressure and, upon removal of the stimulus, the blood pressure either rose or fell to its normal level. Upon the incidence of melody there was either a rise or a fall, depending largely, we feel, on individual reaction to the idea expressed and to the tempo. If an effort was being made by the listener to understand or appreciate music unfamiliar to him, we noticed a steady rise in blood pressure and respiratory rate. A similar rise was produced by the deliberate playing of a wrong note or chord. For instance, the first movement of Beethoven's "Moonlight Sonata" was played to an appreciative subject, and, instead of the composer's final chord being played, the pianist substituted a chord of distinctly modern calibre in a key foreign to the remainder of the composition. A sharp rise in blood pressure was recorded, and the subject complained that the dissonance had caused him some momentary annoyance and horror.

DISCUSSION

In discussing the physiological explanation of these changes we find that certain of them are compatible with alterations in general sympathetic tone. Thus, respiratory increase, coupled with a rise in blood pressure as a response to increased tempo, could be explained by the increase of sympathetic tone, or, in other words, the liberation of adrenalin. The same explanation holds good for similar findings in response to the indirect stimuli, as commencement of music, excitement and restfulness—the last-named producing a relative decrease in sympathetic tone. Change of sympathetic tone, however, would not explain the response to changes in volume by itself, since in this case the blood pressure alone seems to be affected. Here it would appear that this stimulus must have some direct effect on the cardio-vascular centre. The diminution of respiration coupled with a rise in blood pressure when the music induced a feeling of suspense is again explained by a change in general sympathetic tone, but the increase in respiration which should follow this increase in tone is automatically inhibited, so that the sense of hearing may be rendered more active and acute. This phenomenon is one of common experience when a state of suspense is being endured.

In a series of experiments in which the subject was hypnotised, the reactions to the music recorded, and the subject's sensations elicited by questioning, it was found that the direct and psychical stimuli could be very closely correlated. For example, where there was a rise in blood pressure and respiratory rate, due to a marked increase in tempo, the subject described his sen-

sations as those of muscular activity, such as running or dancing. In one such experiment, a work of definitely exhilarating type was played to a subject in hypnosis, and after the music had ceased she was questioned as to her opinion of the work. She said that it made her think of " a lot of people dancing round and round in the wind." On further questioning she replied that she felt as if she, too, were dancing with them. The recording apparatus showed that the respiratory rate was very markedly increased, with a definite compensatory effect after the cessation of the stimulus. In this case there could have been no preconceived associations with the music, as the particular piece was quite unknown to the subject. This close correlation opens up an interesting field of conjecture. Are these physiological changes direct reactions of the individual to the purely physical stimuli, these reactions being interpreted in terms of subjective or emotional sensations, or are these emotional sensations the immediate response to the stimuli, themselves giving rise to the physiological changes recorded?

In conclusion, although the results enumerated appear to be consistent with each other, we realise that we have only touched the fringe of this subject. The number of experiments we have made being limited for various reasons, we hesitate as yet to accept our results as statistically proved, but regard them more as being very strongly indicative. Investigations of changes in heart-rate, together with a more accurate mechanism for timing the relationship between stimulus and response, would doubtless put these results on a more exact basis.

Before closing this paper we wish to acknowledge our indebtedness to Mr. W. R. Spurrell for his kindness in providing us with apparatus and reports of previous investigations.

SUMMARY

Stimulus.	*Respiration.*	*Blood Pressure.*
	DIRECT STIMULI	
Tempo	Increase with increased tempo	Rise with increase in tempo.
	Decrease with decreased tempo	Fall with decrease in tempo.
Tempo and volume	Increase with increased tempo and volume	Rise with increase.
	Decrease with decreased tempo and volume	Fall with decrease.
Volume alone	No change	Rise with increase.
Pitch	No evidence	No evidence.
	INDIRECT STIMULI	
Commencement	Rise	Rise.
End	Return to normal	Return to normal.
Incidence of melody	Rise or fall	Rise or fall.
Annoyance or excitement	Rise	Rise.
Suspense	Fall	Rise.
Restfulness	Fall	Fall.

Back to Apprenticeship ?

By "Stanley"

AT the recent Annual Representative Meeting of the British Medical Association, the representative for Newcastle-on-Tyne, Dr. Mona MacNaughton, moved : " That in arranging the curriculum for students steps should be taken to ensure that they have a course of instruction with an approved general practitioner after their qualifying examination, but before being allowed to register."

This motion was not put to the vote, because the Medical Education Committee of the B.M.A. had already recommended, in the words of Sir Henry Brackenbury, " a period of practical responsibility under suitable supervision as one of the major changes."

If this means anything at all, it means that there is a growing feeling in favour of a reversion—

doubtless on modified lines—towards the old apprenticeship system.

It implies that the medical profession, whether as individuals or as employers of labour, are conscious of shortcomings in the present curriculum which result in the production of doctors who are not so well prepared as they might be for the conduct of general practice. As by far the greatest proportion of doctors turned out by the medical schools are destined to engage in general practice, the matter cannot be readily dismissed.

This question of altering the medical curriculum is more complex than it appears. Once it is open for discussion, there are so many avenues to be explored and opinions taken before it becomes possible to make a change that the deliberations may easily occupy several years. Like matrimony, these changes cannot be made lightly or ill-advisedly.

There are some who think that far too much time is devoted to the teaching of certain subjects which they maintain are not of much use to the average practitioner in after life.

There are others who feel that the brain of the student is in danger of reaching saturation point before he has succeeded in acquiring a knowledge of things which are essential to him, if any attempt be made to embody in the teaching even a tithe of recent advances. Perhaps these latter are taking it rather for granted that the newly qualified doctor ceases to be a student, whose whole lifetime must be devoted to the study of his profession. They think the curriculum should be confined to essentials shorn of all refinements and trimmings.

Whatever may be thought about the qualifying examination which guards the portals of the profession and entitles the student to register, there is no doubt that specialisation should entail the acquirement of degrees or diplomas in the special subjects. This is the present-day tendency, as witness the special qualifications in Public Health, Tropical Medicine, Radiology, Laryngology and Otology, etc. I am subject to correction, but I believe that of all these special diplomas that in Public Health is the only one registrable. A "Specialist Register" would entitle holders of any of these diplomas to register their names and give them a *bona fide* claim to the rank of specialist. Some such a thing is overdue.

Although the unprecedented advances made in the various fields of medical knowledge make specialisation something of a necessity, it has certain inseparable drawbacks. There is a tendency for the specialist to think along a groove and to misconceive the place which his specialty occupies in the great field of medicine as a whole. The converse also is true.

The outlook of the specialist naturally depends upon the general mentality of the individual. There has been an improvement in this respect during recent years in that the specialist is noticeably less narrow in his outlook—but there is still room for improvement.

There is nothing more obnoxious than the arrogant person who thinks his subject is the hub around which the whole science and art of medicine revolves, and who talks down to the doctor with whom he is in consultation or talks up on a plane which he thinks is above the doctor's level.

At the same time it must be remembered that some of the most hypersensitive susceptibilities of our profession are to be found in the ranks of the general practitioners. It is understandable.

Taking the whole class of general practitioners by and large, *as a class*, they are the very salt of the earth and the backbone of the profession.

In their ranks will be found men with academic distinctions unsurpassed and unsurpassable by those in any other stratum of the profession. Within their professional horizon lies the entire range of medicine, of surgery and of midwifery and gynæcology. They are engaged, as Cæsar said of the Belgæ, "in almost daily battles" with every form of disability and disease. You cannot "rattle" them and put them off their stroke. They have learned the one great lesson which the student has yet to learn and the specialist sometimes forgets, that *it is the common things which happen.* They may not know as much as the specialist of his particular specialty, but that is no discredit. In the days when I used to teach, I often told men that "it is far more disgraceful *not to look* than *not to know*," and this seems to be realised by the general practitioner, for even in specialities they commonly get near the mark.

If you could compare, bulk for bulk, the width of the general practitioner's knowledge of disease and his ability to cope with it—sometimes by the most remarkable improvisations—with the narrower, if deeper, knowledge of the specialist, it would not be to the disadvantage of the general practitioner by any manner of means.

The position of the General Practitioner in the field of disease is comparable to that of a General Officer Commanding an army in the field. Nobody expects a G.O.C. to build his own bridges across streams or to make his own signal arrangements, any more than they would expect him to make the medical arrangements for an encounter battle. He would not dream of dictating to an Ordnance officer how he should set about repairing the recuperator of a field gun. He has specialist officers on his staff for employment as his advisers when required. But he is

the man who knows when a river wants bridging or when artillery action is called for, and he leaves the details in the hands of his specialist officers

Similarly, the general practitioner is the general in charge of a case, and, although he may not be capable of performing a sub-total thyroidectomy, he *must* be capable of knowing the indications for the operation. He leaves the performance of the operation to the surgeon whom he calls in.

If the general practitioner occupies such an important position in the scheme of things, any reduction of the range of the medical curriculum or of the standard of his qualifying examination which would result in the production of a class inferior to the present one, would be not only retrogressive but would be contrary to the public good.

The fact that a recommendation has been made by the Medical Education Committee of the British Medical Association that students should undergo "a period of practical responsibility under suitable supervision" shows a very proper appreciation of the relationship in which the general practitioner stands to the community. There is some reason for believing that this recommendation may be implemented eventually by a regulation requiring a period of practical training in the methods of conducting a practice and handling patients under the conditions obtaining in private practice.

This is highly desirable both from the student's point of view as well as that of the patient. It would provide an opportunity for being taught the hundred and one little things that otherwise have to be acquired by experience, perhaps bitter experience.

Correspondence

The League of Nations

To the Editor of the GAZETTE

SIR,—From time to time in "Passim" you forsake the narrow way of medicine and medical matters as they affect our little community at Guy's and branch out into a discussion on wider issues. That you should limit these diversions to the subject of Peace is commendable, since Peace is the greatest issue in the world to-day. But that you should choose them to belittle the League of Nations and to sneer at the recent Peace Ballot is not commendable. It is regrettable that you should use the date next to the twenty-first anniversary of the greatest day of your young life to practise writing petty sarcasms, regrettable, also, that we, to whom that day means so much, should so have failed that you are capable of this. Youth, we know, is the period of cynical pessimism, but it is also the time of great enthusiasms, and there are to-day, I believe, more young men and women at Guy's who own the latter than that suffer from the former.

If you could get a new approach to the League of Nations you also may be able to see visions. You seem to look upon the League as an organisation aloft and aloof from all people, to be abused when it fails and to be ignored when it succeeds. If, however, you look upon it as yours, for which you have some responsibility, and over which you have some influence, you will be able to say, "I am determined that war as the deciding factor in arguments between nations shall cease, and this—my League of Nations—is the tool whereby I will compel this end." That an organisation should be abolished because it has failed once or twice is not necessarily a reasonable deduction. If it is based upon sound principles the logical deduction should be that the organisation must be improved and supported time and time again until it does the work for which it is devised. And the League of Nations is based upon sound principles. It is based upon the principle that we must live in a world in which, where any issue, whatever its magnitude, is involved, ethical considerations do arise. You do not live in that world. Why not change and come over into it?

Yours, etc.,

T. B. LAYTON.

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EDS. { P. W. C.
M. A. P.

GUY'S HOSPITAL GAZETTE

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PASSIM

THE Stand at Honor Oak Park was destroyed by fire last week. It was at about quarter to one in the afternoon on that very hot day Wednesday, August 21st, that the fire was first noticed, and, strangely enough, it had gained considerable hold before the alarm was given by painters working on the roof. Despite the immediate employment of hoses used for watering the pitch and the efforts of the Fire Brigade, which appeared shortly after the alarm, the Stand was blazing fiercely within three-quarters of an hour, and, being composed mainly of wood on a steel frame, was completely gutted in a short time. Fortunately no other damage was done except to the turf, which was scorched over an area extending to 50 feet inside the touch-line, and to the windows of adjacent houses, some of which were cracked by the heat. It was well that there was no wind blowing, or the damage to the surrounding properties would have been considerable.

Kirby, the groundsman, on hearing the news by wireless, flew back from the Channel Islands, where he was on holiday. The cause of the fire is completely unknown, but the damage is estimated at about £4,000, which sum, it is hoped, will be covered by insurance. The Stand was built in 1921 out of the enormous gates that our post-war Rugger teams then drew, and seated about 850 people, apart from the Press box. It is hoped that a new Stand, built largely of concrete and therefore less inflammable, will be built within the next three months, and the Clubs' Union Council is to meet very soon to discuss this project. We reproduce a photograph of the gutted building, by kind permission of the *South London Advertiser*.

THE daily papers are beginning now to occupy themselves with " League " problems—not, however, those problems which occupy the minds of our angry correspondents, but problems of another League whose Orient relates not to Abyssinia but to Clapton. We at Guy's, though it is barely autumn, are also beginning to turn our minds towards football, albeit of a different kind.

We publish elsewhere in this number the Rugby Football Club fixture list for this season. This list in every way compares favourably with those of former years, though the presence of the All Blacks touring side has increased the difficulty in arranging fixtures with some of the larger clubs whose players are likely to be in frequent demand for representative matches, and the Blackheath fixture will not take place, as it was impossible to find a date suitable to both sides.

What is likely to prove a valuable innovation is the introduction of fixtures, apart from Cup matches, with other hospitals — Bart.'s, St. Thomas's and the London. Opportunity will thus be given for the trial of players from the A and other teams.

Two new fixtures are those with Liverpool and Neath. The Aberavon home fixture is to be earlier this year, and after the return match at Aberavon the team will remain in Wales over the week-end to play Neath on the Monday.

We look forward to a season of increased interest both from the Hospital and the international point of view.

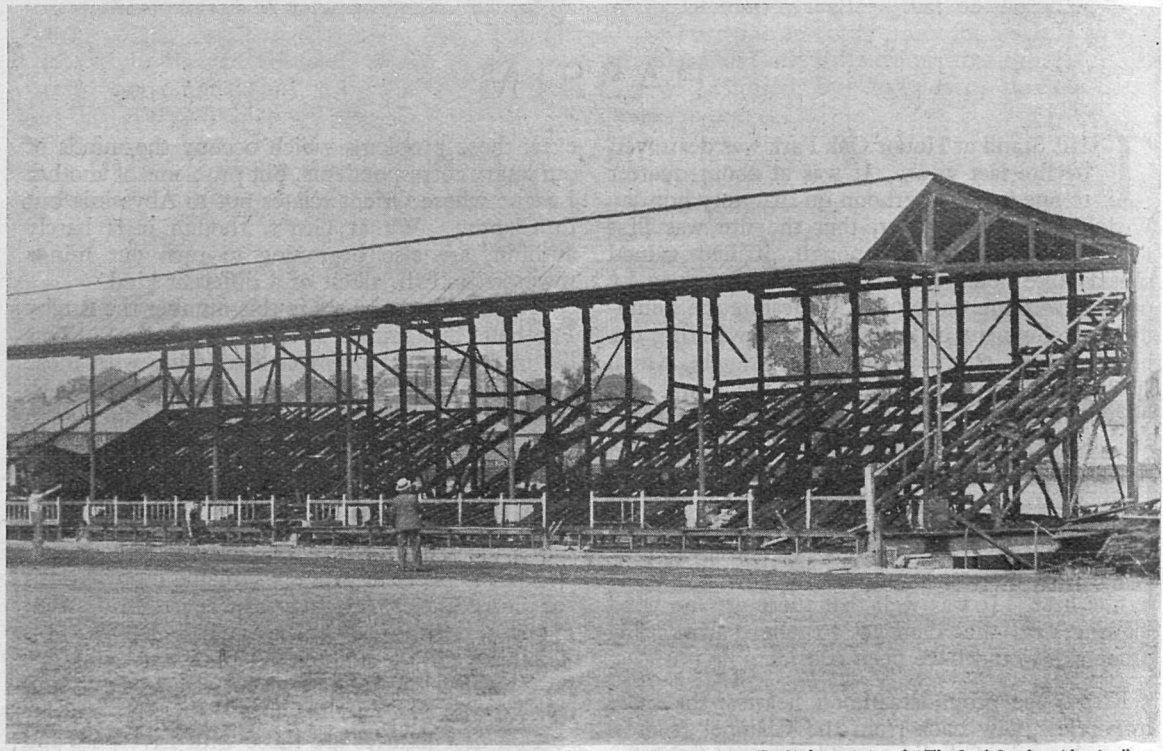
OUR Dental Correspondent writes: " Owing to the generosity of an anonymous benefactor, 28 children from the Children's Department of the Dental School were enabled to spend a long and enjoyable day at Eastbourne on July 24th. They left the Hospital at 9 a.m. and returned at 9.15 p.m. and were entertained magnificently by Mr. D. Guthrie, who spent the day with them. We are

deeply indebted to him for his great kindness, and we also feel that he may be able to shed some light on the identity of the mysterious unknown benefactor."

REHEARSALS for the next concert of the Musical and Operatic Society are to begin shortly. We are informed that new members are needed for the orchestra, especially string players, and we hope that there will be no hesitation among musicians, either those who have lately come to the Hospital or those who have hitherto concealed their talents, in making application to one of the secretaries, Messrs. W. H. Clarke and D. H. Mackay. We have been asked to say that anyone who is interested is very welcome to attend the rehearsals, which will take place in the Nurses' Home every Thursday evening at 8 o'clock, starting on September 5th.

WE publish elsewhere a lecture by Dr. J. Eastman Sheehan, of New York, the plastic surgeon, which was delivered in the Anatomical Theatre on Monday, July 29th. We have referred before to the remarkable technical artistry of the colour films, and the brilliant results obtained from plastic operations are shown in the very striking photographs which we reproduce below.

Dr. Sheehan, during his brief stay in England, very kindly found time to write some additions to the lecture specially for the *Gazette*. We were very glad to welcome to Guy's this well-known personality of the surgical world. Dr. Sheehan is reputed to have "lifted" innumerable faces that have sagged beneath the weight of those crowns that press so heavily on the wearied heads of the Royal Families of Europe; he has travelled far and has seen the insides of many places that the ordinary man may not enter. But though he has "walked with Kings," he has not lost the "common touch," for he can talk widely and give illuminating information on any subject. His power of conversation and his penetrating art criticisms are rare attributes in a member of so specialised a profession. We are very grateful to Dr. Sheehan both for his lecture and his kindness in making the additions.



(By kind permission of "The South London Advertiser."

The Grandstand at Honor Oak Park after the fire.

SIR KINGSLEY WOOD has kindly consented to distribute the prizes and to deliver the opening address at the Medical School Prize Day. Further details of this occasion, which is to take place on Tuesday, October 8th, will be published later.

Obituary

ARTHUR ALAN MILLER, M.D.

(Reprinted from the "Lancet")

GUY'S men of the eighteen-nineties will hear with deep regret of the death of Arthur Miller.

Arthur Alan Miller was born in 1874, being the second son of the late G. W. Miller, and was educated at Forest School, Walthamstow. He entered Guy's Hospital in 1893 and had a successful medical career as a student. He was one of the most popular men who ever entered Guy's. He was a clever amateur actor and also a good character writer. He had a very large share in the Guy's Hospital comic paper *The Guyoscope*, one of the most famous of all hospital journals while it lasted. He was invaluable at all Hospital concerts and dramatic entertainments, and no one in the last generation has quite filled his place in the social life of the Hospital.

After qualification he worked at the Northampton Hospital, and later went to Durham and took his M.D. degree there.

He practised for a few years in Sutton, and moved to Westminster not long before the War, and, while practising there and in the City, published a book on "The Care of Children."

Early in the war he joined the R.A.M.C. and saw varied service in casualty clearing stations in France, Mudros, Egypt and Italy, and was mentioned in dispatches. The end of the war found him Acting Lt.-Col. in command of a casualty clearing station on the Italian Front. After the war he served for about six years at the Ministry of Pensions, and later resumed his practice in the City, where he was medical advisor to several important banks and companies.

Throughout his life he was greatly interested in the stage, and wrote several sketches for Arthur Roberts and George Graves. Among his plays were "The Gipsy Princess," "A Night Out," "The Early Girl," and "Motherhood," and, in conjunction with Mr. George Arthurs, he wrote the Aldwych farce, "Marry the Girl." He was a member of the Savage Club.

He had been in ill-health for some time, but had continued his work with great courage.

In 1924 he married Miss Eleanor Street, daughter of the late Rev. J. C. Street, and leaves a son aged ten.

Reparative and Reconstructive Surgery

An Address by J. Eastman Sheehan, Esq., M.D.

I.—UNILATERAL FACIAL PARALYSIS

LADIES AND GENTLEMEN,—You will be shown on the screen the steps in an operation designed to correct the characteristic disfigurement due to unilateral facial paralysis. This paralysis, as you know, is fairly frequent; the facial branch of the seventh nerve having ceased to innervate the muscles of the face, the patient can no longer control the movements of the eyelids or the mouth. There is lagophthalmus in the orbital region and distortion at the oral sphincter on the paralysed side.

Some years ago I had occasion to restore a number of such cases among the wounded of the Spanish army returned from the war in the Riff, in Morocco, and have been stimulated, ever since, to compare the relative values of the different methods devised for correction of the condition.

You probably are aware of the method employed by Sir Charles Ballance, of London, and Duel, of New York, in collaboration, who seek to restore the function of the facial nerve by means of nerve grafts. While this method has much to commend it in cases of recent origin, it is quite insufficient when applied to those of long standing.

In my clinic we have had to deal with cases, in civil life, of ten, twenty, thirty, even fifty years' duration. For example, the one to be corrected before you on the screen had lasted sixteen years. In such cases the method I employ differs radically, even in principle, from the one developed by Ballance and Duel. Strips of the temporal muscle, turned on pedicles, and brought into close association with the paralysed muscles of the face, transmit to those muscles the nerve energy of the fifth nerve, which supplies the temporal muscle, re-animating the muscles over which they are imposed.

You will observe how the temporal muscle is exposed, the skin being raised well above the hair-line, how four strips of the muscle are freed and how they are brought to new situations—one, under the cover of the cheek, to the corner of the mouth, another under the skin of the lower lid, a third under the skin of the upper lid, and a fourth well forward on the frontalis muscle.

Not only is this method attractive from the viewpoint of the possibility of re-animation; over a long experience it has given excellent results.

The temporal muscle is large; it is fan-shaped, with strands, vessels and nerves radiating from the same point and taking the same vertical direction. Taken at suitable intervals, so as *not* to weaken the muscle for its function of controlling the lower jaw, there can be conveniently raised two full-thickness strips, one for the mouth and a smaller one for the frontalis, and two of half the thickness of the muscle for the eyelids.

Naturally, one does not decide upon this method without giving due weight to considerations suggested by the completeness of the paralysis, the date of its occurrence, and the possible adequacy of other methods. The trouble may be due to a recent, and perhaps not too serious, traumatism. In such case relief may be had by removing pressure on the nerve where it traverses the canal, or may be there repaired by a nerve graft, as Ballance and Duel have shown. But in these cases of long standing—and they are, as you know, *far* from infrequent—there is much to be said for the method about to be demonstrated on the screen.

OPERATIVE PROCEDURE,
and commentary on the film.

The patient in this case was one year old when she had an attack of Bell's palsy. For the other sixteen years of her life she has been a victim of facial paralysis.

Note the characteristic symptoms. Complete paralysis of the orbital sphincter on the affected side, with lagophthalmus, and paralysis of half the oral sphincter, the mouth muscles drooping from the mouth corner on that side.

Fig. I.

A.—Patient at entry. Eyes open.

B.—The same. Eyes closed, with lagophthalmos evident.

We begin by inducing complete anæsthesia of half the face, beginning with the supra-orbital and infra-orbital nerves, then infiltration in the tissues of

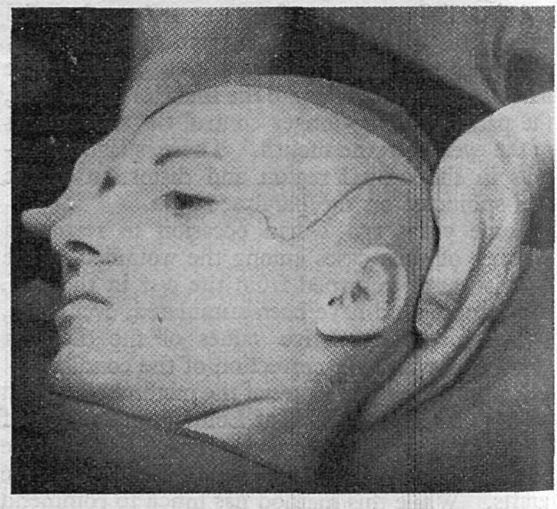


Fig. II. Proposed line of incision.

the lower eyelid and then the upper eyelid to the internal canthus; anæsthesia of the internal canthus; anæsthesia of the cheek to the corner of the mouth.

My method consists in the employment of four pedicles dissected from the temporal muscle. The first to the corner of the mouth, the second to the lower eyelid, the third to the upper eyelid, the fourth to the frontalis muscle.

The anæsthesia completed, wide incision is made in the temporal region, commencing at the external orbital canthus, passing over the zygomatic arch and continuing past the hair-line.

The skin is retracted, exposing the fascia which overlies the temporal muscle. Bleeding is checked and controlled by diathermic coagulation of the vessels.

From the incision line the skin of the upper eyelid is undermined, from the external to the internal canthus. The same with the lower lid.

With the eyelid skin thus undermined to the inner canthus, we make an incision, circular in direction, between the inner canthus and the nose, exposing the internal lateral ligament. The orbital orbicularis is now ready to receive the two strands to be brought from the temporal muscle.

The skin of the cheek is undermined to prepare a tunnel downward on the face. Elbow scissors are used here, for they facilitate the undermining.

At the lower end of the tunnel so made an incision is made, to expose the numerous muscles to be re-animated in this region; among them the quadratus labii superioris, levator anguli oris, zygomaticus, the descending strands of the orbicularis

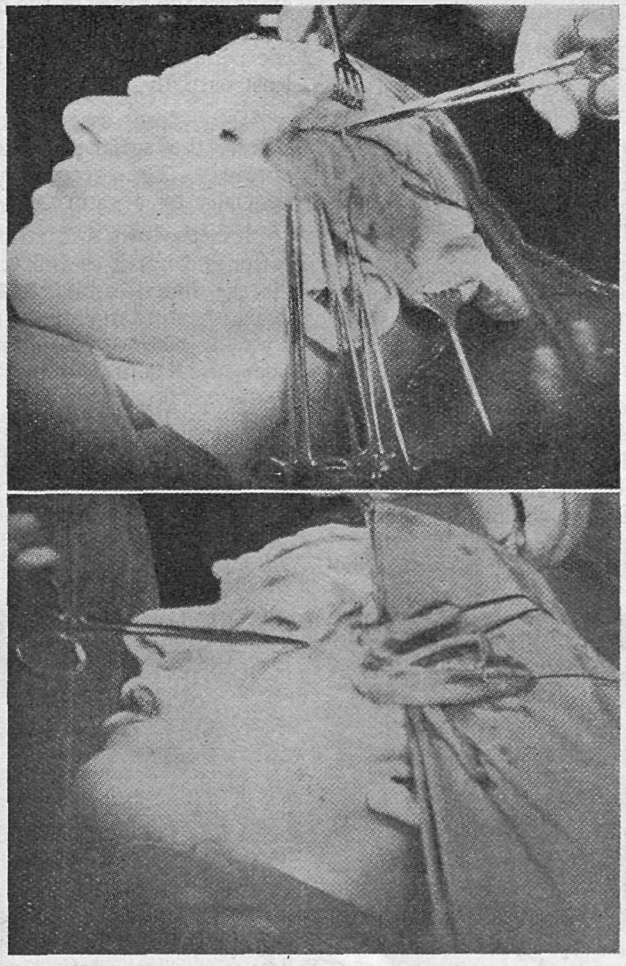


Fig. III.

Upper, fascia covering temporal muscle exposed. Lower, pedicle strips ready for transfer.

oris. The skin has now been undermined, and a way has been made from the temporal region to the mouth.

To expose the temporalis muscle, incision is made in the fascia that covers it. Bleeding is again controlled by diathermic coagulation. The exposed muscle is seen to be fan-shaped. It is a large and wide muscle, whose strands have a uniformly vertical direction. The nerves and vessels enter together from below, proceed vertically, and anastomose freely.

Fig. IV.—Incisions closed.

The first pedicle is raised of full thickness of the muscle. The proximal end is a little above the point where vessels and nerves enter. This pedicle is raised completely from the bone. By a silk thread inserted at its end, the pedicle is carried to the mouth region through the tunnel under the skin.

The second and third pedicled strands are not of full thickness, but about half, to be accommodated under the eyelid skin. The fourth, of full thickness, but narrower than the first, is to re-animate the frontalis muscle.

Note that the strength of the temporal muscle is not seriously impaired, the distribution being made to that end.

To facilitate the passage of the pedicle strip to the corner of the mouth and to give it the greatest extension downward, as well as to offset protrusion later, the zygomatic arch is lowered with mallet and chisel.

The first strip is now brought down by aid of the silk thread, through the tunnel under the skin, and sutured with catgut at the corner of the mouth. At this region the descending branches of the dilator muscles, before their insertion amongst the fibres of the orbicularis proper, come together just above it, so that the broad end of the pedicled strip covers all or most of them, at least partially.

After close association has been produced below, the surface incision is closed with fine sutures. The descending strip is maintained centrally by a suture in the cheek.

Next the two thin strips are passed under the lower and upper eyelids, close to the rim margins. At the inner canthus the strips are sutured to each other and then to the internal lateral ligament. By re-animating the lid muscle these strips overcome the lagophthalmus.

The fourth strip, taken of the full thickness of the muscle, is given insertion over the paralysed frontalis muscle, giving further re-animation in the orbital region. The temporal muscle is still adequate for its special function, if these strips have been judiciously taken.

A. B C.

Fig. V

A.—Later photograph. Eyes open. B.—Same Eyes closed. C.—Whistling.

The fascia that had been raised to expose the muscle is returned and the incision closed.

The operation is ended. Note the movements of the eyelids. Control of voluntary motion in the orbital area has returned. The lagophthalmus has disappeared. Movement has returned to buccal and oral muscles. Note the drain.

II.—SKIN GRAFTS

When the next three films about to be shown are taken together, they provide an elementary exposition of the uses of skin grafts. Certain actual operations are presented, and it happens that in following these you will witness the preparation of a tubed pedicle flap, the taking and emplacement of an epidermic graft, of an eyelid graft, of full-thickness grafts borrowed from the neck and the abdomen. The films are intended to illustrate the details of the methods employed and the particular qualities and special availability of the different orders of skin grafts and not, at this time, to present end results.

As you know, there are two main types of skin graft, namely, the free graft and the pedicled flap. The free graft is so called because it is entirely severed from its surroundings and immediately removed to another situation. According to their thickness they are referred to as "free epidermic," "free intermediate," "free full thickness." With the pedicled flap, on the contrary, the part intended for the repair continues to receive its nourishment through a pedicle which continues attached to the donor region. Of these the most notable is the "tubed pedicle," in which only the sides are raised, and then given the form of a tube by uniting these lateral edges, without, for a time, severing the flap at either end.

Evidently, with so many forms to choose from, the choice is dictated by the conditions found in the individual case, and not alone by those of anatomy and biology, but with consideration for form and coloration as well. There must be concern lest, in taking the graft, needless disfigurement result. And there would be disfigurement of another sort if in thickness, texture or coloration the skin proved to be out of harmony with the rest of the area to which it is transferred. Application of these general rules is an important feature of each of the operations to be shown on the screen.

This section, though not included in the lecture has been specially written by Dr. Sheehan for the "Gazette."

III.—SELECTION OF SKIN GRAFTS

As a general proposition, it can now be assumed that skin grafts will respond to any demand made upon them, always provided they are shown the respect that experience proves they demand and treated with the skill that is gained by demonstration of what they will and what they will not resent. The size of the defect to be covered is not, in reason, a barrier to success.

There is plentiful opportunity, nevertheless, for the exercise of discrimination and judgment, for what will do very well in one set of conditions may be wholly inapplicable in another.

For example, suppose there is a defect caused by loss of the skin of a lower eyelid. A Thiersch graft would cover it and would be certain to "take," but the Thiersch graft has a tendency to take on a prune juice tint in time, and its use might result in the production of a serious blemish. On the other hand, if the skin all round the defect has been permanently altered in colour, say by a burn, introduction of the Thiersch might be highly desirable, because a spot of white skin in the midst of the discoloured area would itself constitute a blemish.

Or suppose the defect is on the upper eyelid. It might be practicable to cover it with a full-thickness graft taken from some remote part of the body. This might be perfect, as a graft, but its thickness would prevent the raising of the lid and formation of the folds. That being the case, the resort is to the upper lid on the other side, which can spare, with only temporary inconvenience, a high percentage of its total substance. This is, indeed, a full-thickness graft, one that "takes" very readily and which serves admirably for small replacements on the face, *e.g.*, where a mole has been removed.

Where the loss is to the vermilion border of the lips, one cover obviously is not as good as another. A mucous membrane graft supplies the colour as well as the cover.

The cul-de-sac of the eye presents at least two nice occasions for choice. Usually the tissues have become incoherent in mass, and perhaps adherent to the lids. To give the lids their shape and consistency is in itself a delicate enough undertaking. To cover the separated sections, to prevent their again coalescing, and to admit of a prosthesis being introduced and retained in a stable position calls for discrimination. In times past, whole-thickness grafts have been introduced, but those who did so forgot that there are hair follicles, sebaceous glands and sweat glands in whole-thickness skin. Hairs and exudations are both offensive, particularly when the latter become rancid. Moreover, the skin in such grafts is too thick to be nicely moulded to the shape of the prosthesis, with the result that the latter shifts about, not a nice characteristic even in a glass eye. The Thiersch graft, on the other hand, does

provide a dependable pouch for the prosthesis, it does not carry any of the objectionable glands or follicles, being a mere translucent shaving of the epidermis, and it serves the particular purpose more admirably than any other would.

On an exposed surface, if conditions compel its use, the Thiersch has the great advantage that there is practically no limit to the amount that can be taken, a consideration that may be of importance if, for example, there is a vast burned area that must be covered without delay. The taking of the shaving, which does not go below the tips of the papillæ, is practically a bloodless operation and does not subject the patient to any noticeable strain.

But an almost equal amount can be safely taken of what is called the intermediate graft, one which carries, with the epidermis, the upper portion of the corium. With this graft the reorganisation is rapid, the skin junctions, where care is taken, are all but imperceptible, and the skin surface retains its natural coloration. In one instance, physicians about to make a blood test had to be informed that the whole forearm had been so treated, so little evidence was there that the grafting had been done.

In many areas, facial and other, denudation, whatever the occasion for it, calls for replacement with full-thickness skin. The problem here is that of restoration of vessels and nerves, moribund within the skin after it has been severed from all its surroundings. In practice, this sets certain limits to the size of the graft. But what is still more important is that, to enable it to get the best support from the tissues below and the fluids intervening, the pressure must be neither too much nor too little. Once the experience had established what was best in this respect, allowance made for grafts of different consistency, the proportion of failures, in the hands of those who know what otherwise should and should not be done, fell off from an average of 50 per cent. to practically nil.

It is an axiom in reparative surgery that we should not, in eliminating one disfigurement, produce another. For that reason it is not desirable, where it can be prevented, to use on the face or neck a pedicle graft raised and swung from an adjacent area also ordinarily exposed. There are times when this has to be done, and when the flap, once raised, has to be returned and " delayed " or otherwise adjusted (as in total rhinoplasty), but in the main the same effect can be had with pedicles raised and " tubed " on some distant part of the body, as the abdomen, and " migrated " (by raising the distal end to a higher position, or by insertion in a favourable situation in the hand) to a point where it becomes available for the covering of the defect. In extreme instances, as in some cancer defects that formerly would not have been made because they could not be covered, the migrated tubed pedicle is used to afford substance as well as cover, with possibly fat and fascia filling of a depression that would still remain. Since there is blood supply and venous and lymphatic return at both ends of the " tube," and hence less danger of loss and gangrene than with the single pedicle (in fact none at all), measures for its use, in the quantity of tissue required, can be concerted with the fullest confidence of fulfilment of plan.

Out of this last a consideration arises, as yet little understood in the profession generally, namely that in the case of these exceptional defects, and particularly in relation to cancer defects, on this and other grounds peculiar to malignancy, planning for cover of the defect should begin with the plans for making it. This is all the more true now that removal of the malignancy is coming more and more under the diathermic coagulation method, with the facilities that method offers for subsequent observation and the selection of the time when covering can be undertaken to the best advantage and with the maximum of assurance.

IV.—TUBED PEDICLE AND EPIDERMIC GRAFT

The first film permits us to follow easily the preparation of a tubed pedicle graft. The patient had suffered from cancer of the right lower jaw. After the cancer had been dealt with, part of the mandible was found to be completely necrosed and degenerated. This having been removed, the way was clear for restoration at the side of the mouth. You are about to assist at the preliminary phase of this restoration, the formation of a pedicle which, later, and only later, will be brought to place at the jaw.

The tube is formed from the skin of the neck, taken in its full thickness, then rolled inward and sutured. In doing this the tissues below are left bare, and we cover the defect immediately with an epidermic graft taken from the abdominal area.

The film ends here, but the operation is, in fact, continued in further sessions, during which one end of the flap is brought to place, the remainder of the tube discarded, and the donor area permanently covered with a free graft.

OPERATIVE PROCEDURE

and Commentary on the film.

What is required is to prepare a tube, ample both at the lower end and for covering the defect and

long enough to allow the lower part to be brought to place when turned on the upper pedicle.

The borders of the required graft are traced on the neck skin.

Local anæsthesia is induced with novocaine. A double syringe facilitates the injection of large amounts of the fluid anæsthetic. All the tissues can be impregnated abundantly, while the patient remains perfectly calm.

The knife used is a section of a razor blade, mounted in a blade-holder, and is easy to obtain, always sharp at the point, and easy to manipulate.

The skin on the borders of the pattern is incised. The tissue at the end of the incision on the right, which will form the graft at the next intervention—it is a cancer of the right lower jaw —must be treated with respect. Only the middle part of the freed area will be folded on itself, to form a tube.

The upper and lower borders are joined by a series of sutures.

The skin is separated, in its full thickness, from the tissues below. While this proceeds the scissors should be held continuously near the skin.

The tube now takes form. Bleeding, which is not considerable, is controlled by diathermic coagulation.

When there is need for the graft to be brought to place, I will release the tissues at the right and bring them to place on the jaw. The tube will follow the movement of the flap.

The tube is now closed along its length, with sutures which are fine, strong and elastic. There is no eye to the needle, the thread being enclosed in a tube at the head, on the central axis.

The tube is now entirely formed, leaving a raw area below. This raw area is to be covered by an epidermic graft from the abdomen, for which a long flat knife is used, and the bevel that allows us to take generous shavings of the epidermis is very thin and regular. Bleeding is negligible.

While we take only two grafts, one on the right and one on the left, we could, if need were, take from the whole surface of the abdomen.

When we think the grafts are long enough we detach them with scissors, and, until ready to transfer them, they are left in their own serum.

The grafts are put in place on both sides of the tube, and contract when in position.

We suture the epidermic grafts. In ten days these grafts are entirely " taken," replacing, as cover, the skin we have taken for the tube.

The epidermic graft has a grey tint, which is perfectly natural.

III.—EYELID AND NECK GRAFTS

The grafts to be shown in the next film, like those in the one before it, represent but one phase in a long surgical treatment.

The patient, during twenty years, had submitted to many operations for angioma, and also to radium and X-ray treatments. When I was consulted, I found a tumour and, moreover, a series of burns on the cheek and on the lower eyelid on the left side.

In a first operation, I proceeded by an incision following the line of the inferior maxilla, then removing the tumour by electric cauterisation. Three months later (it is at this point the film begins) I excised the scars from the lower lid and the cheek, covering the tissues so denuded by free grafts, of which one was brought from the upper eyelid of the opposite side and the other from the neck.

There was no need for replacement at the areas from which these grafts were taken. Both the eyelid and the neck have ample reserves of skin and I had no difficulty, at any time, in approximating the wound edges for suture.

In this film we add to the clinical demonstration a view of the grafts some days after they were put in place.

OPERATIVE PROCEDURE

and Commentary on the Film

Anæsthesia of the upper and lower lids of both eyes is obtained by novocaine. Note the scar under the left eye, which we are about to excise, replacing it by a graft taken from the right upper eyelid.

Note also the scar on the cheek, to be excised and replaced by a graft from the neck. During this anæsthesia one may judge of the thickness of the scar by the resistance it offers to the needle.

A few drops of argyrol are inserted in the eye cavity.

We proceed to surgical closure of the upper and lower lids on the left side. The knife, made of a section of razor blade, carried by a blade-holder, is used to incise the mucous membranes of the lids. Note that the instrument supporting the membranes during the incision admits of working with great precision.

By a system of sutures, we now join the upper and lower eyelids. The surgical adhesion is supported by two bits of rubber.

The lids being joined, we excise the scar from the left lower lid. You will remark that a metal guide or pattern is used when making the incision.

The pattern also serves as a model when the graft is taken.

The eyelids on the right side are immobilised. The upper lid gives us a graft which in texture, thickness and coloration is the nearest match for the skin of the lower lid, on which it is to be placed.

We can without danger take a large graft of eyelid skin. As much as two-thirds, in width, can be taken, in the form shown, without producing lagophthalmus or disfigurement. A cataract knife is used.

The graft is lifted by two silk threads. It occupies exactly the place of the excised scar on the lower eyelid, covering the defect.

We suture the graft, and then the wound edges on the right eyelid. Note that there is no lagophthalmus and that the colour of the graft is entirely normal.

You observe the pattern by following which we attack the face scar. We incise at the edges of the scar and excise within the region so delimited.

The procedures for excision of this larger scar are essentially the same as were employed in removing the eyelid scar.

A raw area will be left, which must be covered by a graft. We can take it from behind the ear, from the forehead or from the neck. In this instance we choose the neck, which will give us a graft that later will be covered by hair (beard).

The graft is taken. The loss of skin will not be perceived when the operation ends. It suffices to undermine the skin, stretch the edges forward and suture. There need be no more than a thin line of scarcely visible scar.

The graft is now ready to be moved. The skin, detached from its surrounding and subjacent contacts, shrinks. This is a reminder of the usefulness of a pattern, with which to conform the graft to the defect that is to be covered.

The graft is established in place, and sutured to the adjoining skin.

The operation is finished, and the grafts are left to themselves.

The wound edges on the upper lid, sutured, offer no suggestion of lagophthalmus.

Ten days later the dressings are changed. On the lower lid the eyelid graft is rose colour, perfectly normal. The face graft has " taken " ; the wound on the upper lip is healing, without lagophthalmus or disfigurement.

IV.—FULL-THICKNESS GRAFT FOR BURNED HAND

We have in this film the application of a skin graft to the reconstruction of a hand. The patient had been burned by an explosion of petrol, and the back of the hand had become nothing more than a compact scar. As the tendons could move only with difficulty, or not at all, the fingers were immobilised accordingly, and the hand could not close. You will remark also that a reduction of the skin surface tended to prevent normal movement of hand and fingers. The principle of the repair was therefore evident. What was necessary was to remove the compact, inert scar tissue, and replace it with a graft of skin that would permit free movement of the complex elements of the hand. This is what was done, a full-thickness graft being taken from the abdomen.

The whole operation is described, except the cover of the abdomen defect by a graft from the leg.

OPERATIVE PROCEDURE

and Commentary on the Film

Regional anæsthesia is obtained by injection of the brachial plexus.

The scar, due to a petrol burn, has caused contraction of the hand, especially between the thumb and index finger, and fixation of the tendon of the thumb and index fingers. The joints of the thumb are ankylosed and the patient cannot close the hand.

An incision is made, following the edges of the scar, passing over each finger, and rejoining at the wrist.

The scar is raised from the subjacent tissues. It is very hard, like so much leather, and is taken all in one piece. This is a delicate piece of work, as one must carefully respect the veins. The scissors are held close to the under surface of the scar throughout, which comes off like a glove.

The superficial venous system is nicely exposed. Notwithstanding its investments by scar, I was able to conserve the system intact, so that there was no bleeding. This is most important, for bleeding will make the tissues of the defect unsuited to receive a full-thickness graft. The base must be clean when the graft is implanted.

The scar tissue is finally detached from the hand and fingers.

We uncover and follow the tendons immobilised by the scar. The tendon of the thumb and index finger, when freed, is seen to have retained its normal length. The tendons will now function properly without need to lengthen them.

We transfer the excised scar to the location on the abdomen where the graft is to be taken. The scar itself serves as the pattern for the graft.

The incision is made following the form of the scar. Note, however, that the line of incision is carried out beyond the present dimensions of the scar.

The graft is detached from the abdominal surface. The raw tissues left are covered by a thin epidermic graft from the leg.

The graft is brought to the denuded area of the hand and fingers, which is covered to the wrist.

Paraffined silk threads are used for suturing. The first suture is between the index and second fingers, and then the sutures are continued between the fingers, and last along the thumb.

The graft is normal in colour. The suturing is finished, and the graft is in place, entirely replacing the scar.

The hand and the fingers have resumed their normal movements. The tendons, freed from their investment of immobile scar tissue, now allow the patient to bend the fingers.

We apply over the graft a dressing saturated with " zeroform."

V.—RECONSTRUCTIVE SURGERY

A Case of Retroussé Nose

We have come to divide nasal disfigurements into two main categories. We distinguish between those in which there is loss of tissues, as after

Fig. VI.—Plastic Operation on the Nose.

This is not described in the lecture but is interesting as a further illustration of the successful results that may be expected from plastic operations on the face.

accidents, in the case of some stages of syphilis, etc., and the more frequently encountered condition in which there has been some departure from the normal construction of the nasal framework. What you are about to see is a tip-tilted nose that comes within this second category.

Certain general considerations determine the nature of intervention in these cases of malformation of the nasal framework. You will observe that the skin and the soft tissues adapt themselves to the form established by the bones and cartilages. If the framework is irregular or abnormal, the outward appearance of the nose will reveal the irregularity. If, on the other hand, the framework is suitably and symmetrically proportioned, the outward nose form will be correspondingly satisfactory from the æsthetic viewpoint.

If, then, a deformed nose invites surgical intervention, our concern should be to reconstruct the nasal framework with consideration for those æsthetic details which have been impaired by nature or injury. We may be obliged to dislocate the nasal skeleton, to modify some of its elements as presented in the instant example, set them up as it was intended they should be in relation to one another and to the face, and hold them in their new situations until reorganisation has been accomplished.

OPERATIVE PROCEDURE

and Commentary on the Film

The case illustrated by the film is a fairly simple one. We are concerned only with the lateral cartilages and the nasal septum in this operation. It is the hypertrophy of the lateral cartilages and a deficiency in the septum that combine to produce the disfigurements at the nose tip, which is both gross and tilted backward. We have modified the character of these cartilages, and the soft tissues have adjusted themselves to the modifications in the framework.

You will observe that, as in all such cases, we obtain access to the cartilages, and to the bones when necessary, through incisions made *inside the nostrils*, and that we give the greatest care to respecting the circulation. The blood supply to the mucous membranes is by minute vessels of great number.

Finally, let me remark that we do not hold it to be a duty in these reconstructive operations to fashion a nose that is in itself æsthetically perfect. That would be in itself something abnormal. We content ourselves with so reforming the nose that it will be in harmony with the rest of the face.

The operation is designed to give normal form to a nose deformed at the nose tip. In this instance the disfigurement is due to two abnormal conditions : First, the lateral cartilages are hypertrophied in an unusual degree ; second, the form of the nasal septum is markedly abnormal, being too high and also square at the nose tip.

Anæsthesia is obtained with novocaine. Infiltration at the root of the nose is designed to reach both the supraorbital and infratrochlear nerves. Anæsthesia of the infraorbital nerves is obtained separately, as is that of the columella and the margins of the nostrils.

An incision is made in the columella, to facilitate its complete separation from the septal cartilage.

Immediately after this an incision is made within each nostril, exposing the lateral cartilages on both sides of the nose.

The lateral cartilages are exposed and may be hypertrophied. Excisions from them are made, so reducing the thickness of the nostrils, which contributed to the disfigurement.

In like manner we change the influence of the septal cartilage on the nose form. Excisions are made with this in view from the superior and anterior aspects of the septum. The nose takes on a normal shape.

The incisions within the nose are closed, on both sides, with sutures.

Then the incisions are made at the margins of the nostrils. A roll of gauze is employed to remove from the nose any blood remaining after the operation.

The change is now already visible from the surgical intervention ; the tip is no longer retracted, the columella is normal, and the alæ, relieved of the excess of lateral cartilage, are thinner.

Gauze is inserted in the nostrils, to maintain their new form and lightly compress the tissues for a few days.

The cotton rolls applied outside the nose provide also some compression of the tissues and prevent hæmatoma.

The nose has lost its abnormal aspects. Its tip is smaller, the alæ are thinner, and there is no more thick cartilage obtruding.

Four months after the operation, the tissues have subsided and are definitely in their new relations. The displeasing deformity has gone

Guy's Hospital Gazette
(ESTABLISHED 1872)

The Editor will, at all times, be glad to consider articles or sketches, provided that they are accompanied by the writer's name and address, not necessarily for publication. Authors who desire reprints of their papers should make their own arrangements with the Printers when they return their proofs. All contributions to be addressed to *The Editor*, who does not accept responsibility for the views expressed by contributors.

On the Differences Between Individuals

A Paper read before the Physiological Society by J. R. Audy, Esq.

MR. CHAIRMAN and GENTLEMEN,—All of us, at some time during our lives, have had some remarks passed by kindly but provoking people concerning our resemblance to a parent or relative, or to some well-known figure. " Isn't he the *image* of his father ! "—all this because father and son, let us say, happen to have the same big nose or trumpet-shaped ears. The mere fact that superficial differences between individuals should be a matter for comment shows that we tend to think of each individual as a being *sui generis* ; only students of human nature consider them always as belonging to types.

The object of this paper is to dissect and discuss some of the great variety of factors which make one normal individual different from, yet perhaps closely resembling, another. Individual differences and their causation are best discussed separately on anatomical, physiological and psychological grounds, but it will soon be appreciated that these three are inseparably connected. Indeed, I am not sure that it is safe, as far as the orderliness of thought goes, to consider psychology as being apart from physiology, for the connection is very much closer even than that between physiology and anatomy.

You will notice that I shall give close attention to some aspects of this problem, whereas other important aspects will be dismissed with a few words. This has happened partly because of the cruel limit imposed upon the length of this paper, and partly because it would really be more helpful to give you a bibliography and sit down again, than merely to summarise other people's facts and observations—which I should have to do were I to aim at being so comprehensive.

Before we proceed, let us bear in mind the fact that, apart from differing from all other individuals, the *same* individual presents great differences from time to time, accordingly as he is influenced acutely by circumstance or more chronically by environment, occupation and age.

Furthermore, we should remember that what we call personality (which is much the same as individuality) is the integral of innumerable factors, anatomical, physiological and psychological ; but it is essentially a relative and not an absolute term in that we always think of personalities in relation to other personalities. We are, therefore, virtually going to consider the architecture of personality.

INDIVIDUAL ANATOMICAL DIFFERENCES

We are naturally first struck by the differences between the sexes, but since we are all anatomists of sorts it would be superfluous to describe them. The development of either male or female organs depends upon the chromosome-constitution of the germ-plasm of the Wolffian ridge, and is regulated *in utero* and during puberty by the endocrine system. The secondary sex characters are best discussed in relation to the physiological factors which govern their causation.

Differences arising with *age* are observed in the same individual, in whom changes take place with rapidity until maturity is attained and the frame is gradually accelerated towards the grave.

The newly-born is merely a fœtus whose environment has been changed from one of darkness and peace and warmth to one full of light and sensory experiences, in which he is expected to be homoiothermic, and which immediately starts to be responsible for his further development. We can imagine a great duffer of an adult who had just been released from three-score years and ten of intra-uterine life—undeveloped, grossly distorted, sterile, mute and helpless, and with no memories except those of vague squeezes and borborygmi ; his greatest intellectual excursion a knee-jerk. Such a picture makes us appreciate what an exceedingly changeful phase of life is entered on by the fœtus at birth.

The anatomical changes accompanying growth are familiar enough to us, from the undeveloped child through the stage when there is a multiglandular release from thymic repression and the signs of maturity set in, and one begins to work out one's death sentence. There are gross changes associated with ossification and dentition, the growth of hair and the development of pigment, such as in the eyes, and later the appearance of the secondary sex characters. The mental faculties develop *pari passu* with experience.

A third group is made up of those differences which arise as the result of *occupation*. Arbuthnot Lane has discussed the variety of changes, due to pressure, which take place in the skeleton following the performance of various forms of manual labour. So marked are these changes that such an expert as he is able, by an examination of the bones, to dissert on the work which a man per-

formed during life. A single instance of an occupational anatomical peculiarity is a kyphosis to be found among tall barbers, which I have observed on a number of occasions. Round-shoulders or definite hunch-back is a common condition with slack people who have sedentary occupations and with weakly children, and such a deformation may curtail a peron's life considerably owing to an increased susceptibility chiefly to pulmonary disease.

We have considered individual differences between the sexes, and associated with age and with occupation. There remains a group comprising *racial* differences. The chief differences are those (*a*) of the *skeleton*, easily most marked in the skull—and consequently in the features—so that it is easy to put a typical skull into its ethnological pigeon-hole; (*b*) of *pigmentation*, of both skin and hair, and (*c*) of the nature and distribution of the *hair* itself.

Very broadly speaking, the *Europeans* may be considered as being mesaticephalic, leptorhine and orthognathous, and having hair round or oval in cross-section and consequently straight or wavy. The *Negroid* races have black skins and hair, their skulls are long (dolichocephaly), their hair flattened in section and consequently frizzy and short; their noses are squat and they are prognathous—their profile is convex. The *Mongolian* races have yellow skins, Mongolian upper eyelids, and straight black hair; their skulls are short and round, they are mesorhine and mesognathous, and have prominent cheek-bones. This anatomical diversity is accompanied by important physio-psychological differences, and these are, of course, all hereditary, obeying Mendelian laws.

Lastly, there are, of course, innumerable anatomical anomalies: congenital malformations, cervical ribs, atypical muscles and vessels, and so on, commonly of pathological and surgical importance. We may group with these all those differences which arise as the result of disease or trauma.

It is in place here to draw your attention to *physiognomy*—that is, to those anatomical differences which pertain particularly to the features. An experienced observer might be able on occasions to judge something of another's character from scrutiny even of such an expressionless expanse as a bottom or belly, but these regions reflect comparatively little of one's habit and character—in great contrast to the face, possessing, as it does, so many features used in both expression and reception. We express ourselves with facial and oral contortions, as well as with voice and hands, and the use we make of our features in expression moulds them in such a manner that they form reliable mirrors of our character: the humorous wrinkles at the corners of one's eyes, the drooping miserable lines of the pessimist, the blank face of the idiot-bot, or the supercilious expression of the self-opinionated—these are the crudest examples. Volumes may be written about the hungry look on a pious spinster's face.

INDIVIDUAL PHYSIOLOGICAL DIFFERENCES

Let us preface this section by mentioning some physiological differences which are of particular interest to us.

Physiology is biochemistry in action, and we should therefore expect to find that physiological differences are based on differences in bodily chemistry, nearly all of which are wholly or partly hereditary. Such inborn errors of metabolism which appear pathologically as alcaptonuria, cystinuria, hæmochromatosis, dysiderosis, hæmophilia and sometimes diabetes are familiar to us all, as are a number of physiological differences associated with anatomical characteristics—such as in the hypersthenic type of individual with a short, hypertonic stomach, high gastric acidity, and hence a special tendency towards duodenal ulcer. This last condition provides an example of a *diathesis*—a constitutional make-up which predisposes the individual towards a particular disease or class of diseases. We are now beginning to cast doubt on many of the so-called hereditary factors in disease—in cancer and gallstones, for example—but there still remain a number of true diatheses, of which the gastric and the strumous are most widely recognised, together with those connected with asthma, epilepsy, migraine and hypertension. These diatheses are probably based on immunological, metabolic and endocrine abnormalities.

The passing mention of blood-groups and the phenomena of immunity, and particularly of anaphylaxis and allergy, brings our list into a semblance of completion—with one most important exception.

We have already observed that the newly-born is a fœtus whose education has just been started by the simple process of delivering it into a world full of sensory experiences. Absorbing the requisite materials through its gut-mucosa, the infant swells out in a sort of regulated hypertrophy until it assumes adult proportions—but this is not mere growth in the sense that a cancer or amœba grows.

The growth is regulated and controlled by the same kind of mechanism, involving cell-potency and tissue-interaction, that controls the differen-

tiation and growth of the cells in the embryo. That is, it is the growth not of a bioplasmic unit, but of a complex of interdependent, symbiotic units which influence each other—(*a*) physically by contact and the transmission of stresses and strains, as well as by determining much of each other's colloidal and ionic activities, and (*b*) chemically by the discharge of metabolic products into the intercellular medium or of hormones into the bloodstream. Of these influences, the hormonal is the one which is responsible for the greatest variations in the character of the individual. We shall therefore profit by devoting the remainder of this section to the endocrine balance.

Disraeli is credited with saying that " Characters never change. Opinions alter—characters are only developed," and the proportion of truth in this is to be attributed directly to the endocrine balance, which forms the foundations of character and which, although fluctuating, is relatively inflexible. The important thing to realise is that we must consider the endocrine balance *in toto*, *as* a balance ; the ductless glands are all closely interconnected —even the pancreas is related to the thyroid, pituitary and adrenal—and we must consider them as working together as a syndicate.

Furthermore, the endocrine constitution itself is originally determined by hereditary factors, *and indeed constitutes the inherited basis of character*. Hereditary characters, particularly the attributes of personality, are conveyed from one generation to another via the endocrines. *Vice versa*, endocrine disturbances are manifestly of the right nature for modifying the germ-plasm and introducing inheritable characters. We cannot imagine a gene carrying the character of slothfulness, but we can picture one repressing metabolism through the medium of the thyroid gland ; we can likewise easily picture the regulation of stature and build by genes which ultimately produce changes through the pituitary, thyroid and gonads. Moreover, the relation between the endocrine balance and the psychology and psychopathology of the individual is so close and important that we might look forward to the time when endocrine analysis will form an indispensable adjunct to psycho-analysis.

In relation to such hereditary factors, I make no apology for quoting a pertinent and humorous Russian saying, that no man can jump higher than his own navel.

It seems not unlikely that the endocrine constitution of the pregnant mother might on occasions be capable of modifying the ductless glands of the developing fœtus and giving rise to a curious sort of endowment—a hereditary gift not conveyed by germ-plasm. Or the converse might be expected : that the active ductless glands of the fœtus might affect the mother, or at least, in common with the placenta and maternal post-pituitary, have a say in terminating pregnancy. We have a gross example of such interaction in the case of the diabetic mother whose symptoms were relieved progressively but temporarily by pregnancy, and whose child, when born, died in hypoglycæmic coma, with its pancreatic islet tissue enormously hypertrophied.

As physiologists, we are all acquainted with the effects of gross endocrine imbalance—with acromegaly and pituitary dwarfism, myxœdema, or cretinism, and thyrotoxicosis ; the eunuch and the " infant Hercules," and the pseudohermaphrodite. As students of human nature under all conditions, we should also be able to recognise these, and many other, conditions in a diluted form in normal people ; we may see walking about the streets, acromegaloids and short pituitocentrics, puffy peers and near-cretins, effeminate hairless men and masculine hairy women, and a host of others. We can call these people who present definite, if slight, signs of physiological imbalance sub-dysplastics, if I may modify a term used by Kretschmer. We may, further, be able to recognise a dominant gland which is playing the greatest part in producing the departure from strict normality, in which case it will be convenient to speak, as Berman does, of thyrocentric or prepituitothyrocentric personalities, and so on.

The *thyroid* gland controls metabolism, and is in direct balanced relationship with the anterior pituitary. The negative thyrocentric presents a picture of sub-myxœdema, and is perhaps one of the commonest clear-cut endocrine personalities, and is amenable to organotherapy. Sub-hypothyroidism dating from childhood may be represented by imbecility, coarseness and stunted growth in the cretinoid type. The positive thyrocentric is the type of person who always remains lean, with clearly chiselled features and commonly large, expressive eyes, and who is energetic, sensitive and often insomniac—the poet of fiction. The texture of hair on the head is controlled to a great extent by the thyroid, as is also resistance to disease. It is known, for example, that opsonins are mobilised by feeding with thyroid.

The *parathyroids* control calcium metabolism, and we find the negative parathyrocentric presenting symptoms from childhood related to deficiency in the calcium metabolism, undersized and puny babies with a tendency to early dental caries, and generally hyperexcitable and " nervous."

The *pituitary*, as a very complex gland, presents difficulties in analysis. Of course, the positive acidophil prepituitocentric is familiar to us in the acromegaloids and the giants—Carnera is a perfect example. Certainly, pituitocentrics generally are above or below the average in stature, the gigantism or dwarfism being either primary or due to inhibition or lack of inhibition by the gonads.

Just as the adrenal medulla is under nervous control through the sympathetic, so the post-pituitary is under nervous control through nuclei in the hypothalamus, the two forming a single mechanism. I don't think that there is any evidence to suppose that the *pars nervosa* is not merely part of the nervous mechanism, the actively secreting portion of the posterior lobe being the *pars intermedia*.

The hypophyseothalamic mechanism, and probably the anterior lobe also, are closely concerned in the body fat metabolism. We commonly find pituitocentric personalities of the pituitary obese type, which may be expressed only in a tendency towards a "middle-aged spread," and peculiar tapering podgy fingers.

This hypophyseal mechanism, like the pineal gland, appears to have considerable influence over the intellectual functions. It is furthermore concerned in some way with sleep—pathological somnolence may be found with some chromophobe adenomata of the anterior lobe, in the so-called "hyper-somnic brain tumour" (a glioma in the wall of the third ventricle), and in other suprasellar lesions.

One of the functions of the *adrenal cortex* is to govern precocity and the development of the secondary sex characters. Since it is derived from the Wolffian ridge, it is not surprising to find that this gland is closely linked to the gonads and the pituitary. Cortical hyperfunction produces a tendency to masculinity in both sexes; hypofunction tends to produce sexual perversion or even pseudohermaphroditism. The gland is also related to the development of hair and pigment (such as freckles).

The *adrenal medulla* is a gland only of emergency and, when well developed, some individuals can through it raise their own heart rate voluntarily. The Latin races are adrenocentric.

The only other gland I wish to mention is the male *gonad*, and that in connection with hypofunction resulting in the eunuchoid personality: generally undersized, chubby and possibly with some gynæcomastia, and poor development of hair, pigment and larynx.

It is very important to realise that the endocrine constitution and hence the character commonly undergo profound changes, of which we may distinguish four classes:—

(*a*) The regression of a hyperactive gland. The regression of the hyperactive thyroid to hypofunction is a well-known example. The same may occur with the pituitary, and, according to some, occurs physiologically with the thymus.

(*b*) Failure of adequate compensation from other glands may give rise to unstable types commonly found in asylums.

(*c*) Changes may be brought about consequent on illness, great emotion, shell-shock and so on.

(*d*) Changes commonly occur at those times when the endocrine balance is normally in a state of turmoil—that is, at puberty, during pregnancy, and at the menopause.

The medical significance of these need not be stressed.

INDIVIDUAL PSYCHOLOGICAL DIFFERENCES

It has often been deplored that, although such useless and sometimes dangerous characters as red hair and hæmophilia are passed on from parent to offspring, yet in spite of the activities of the Board of Education, no child has yet been born with its father's knowledge of the alphabet or accountancy. But this is hardly a fair statement, and evidently ignores increased capability. Nevertheless, it brings us face to face with the question: Just what characters *is* the infant born with? Now, I like to think not of a hereditary complement of characters, diatheses and whatnot, but of an infant as exhibiting *potency*, in much the same way as a cell exhibits potency. The future development, and final differentiation, of child and cell alike follow a course dictated by the environment or relationship to other people or cells. But remember that the infant is by no means totipotent; it is not capable of developing into *any* sort of adult.

We have mentioned the mechanism of the endocrine balance which almost completely controls the potency, and hence the future character, of the child, and we have comprehended the physiological basis upon which the psychological ensemble stands. I wish now to end this paper by drawing attention only to one aspect of the psychological differences between individuals, and that an educational one, but first I should like to devote a few words to the personality of individuals as it is reflected in their clothes, their habit, their speech and their writing; we have already noticed its reflection in their physiognomy.

It would be a fascinating task to discuss at length the psychology of clothes and the significance of the costumes fashionable throughout the

ages, and amongst different races, as well as the evolution of our modern dress and its relation to our modern ideas. Unfortunately, all that we can do in this paper is to point out that the character of an individual *is* reflected in the way he dresses—in everything from his choice in ties and boots or underwear, to the care he takes of his clothes and the money he spends on them.

" Habit " is a happily vague term under which we can include a heterogeneous collection of the remaining means of expression which an individual possesses. I remember not so long ago being enamoured (at a distance) of a young lady of charming and innocent outward appearance—until I saw her pick her nose with a meditative, if enthusiastic, forefinger. My enthusiasm was suddenly deflated. Fate later brought me close enough to observe that her nails—including the one on the meditative forefinger—were well bitten and disgustingly dirty, and, as a final grim jest, were painted a brilliant scarlet, to draw attention to them. Young blood will out, but the shock was almost enough to upset my endocrine balance, and I daresay that, had I heard her speak, her damnation would have been complete.

The slouching shuffle of the unemployed down-and-out, or the slouching swagger (with turned-up collar) of the unemployed student; the swinging posterior of the saucy flapper, or the aggressive gait of the domineering, provide further examples of the expression of character by habit, but the wholly untrue yet illustrative incident I have just cited conveys to the discriminating mind all I could wish to express on this subject.

As another important means of expression, writing provides a reliable indicator of the writer's inner self. We are all familiar with writing which we would describe as being mean and skimpy, or childish, or generous, or effeminate, or eccentric, or affected, or pompous, and we are not wrong in applying these diagnoses not so much to the writing as to the writer. Let me give you as a single example the character of Theodore, from H. G. Wells's " The Bulpington of Blup," in which this boy weaves for himself an inner imaginary hero as a subconscious escape from his own inconsistencies and failings. As this self-delusion more and more masters Theodore's life, we have described to us how this other individual, The Bulpington of Blup, could even influence Theo Bulpington to sign his name, " with the most grudging of little o's for the Theo and with a long and complicated flourish that was indeed no less than the words ' of Blup,' stifled before they were born."

Time forbids discussion of the voice, and I merely recommend those interested to read Pear's " Voice and Personality."

To leave this aspect of the problem, there is one thing which particularly merits our attention. At the very opening words of this section we mentioned increased capacity for mental development as a hereditary gift. Let us not confuse capacity with ability. We all differ in capacity because we have different hereditary constitutions and are not all equally healthy. We also differ from each other in our respective abilities, but not in the same proportions. Ability is a function of capacity and training; it is the result of educating a capable individual. The examinations we all have to pass are tests not of capacity, but of ability. The intelligence tests of the Psychological Department, however, are tests not of ability, but of capacity. The importance of this from the point of view of education may be illustrated by quoting from Dr. Shephard Dawson's Presidential Address before Sect. " J " of the B.A. on " Psychology and Social Problems." He pointed out that, " as the intelligence ratio seems largely to determine scholastic success, and as it remains approximately constant, at any rate during school life, and can be determined early, it should be possible to organise education on a basis of natural capacity."

From childhood our lives, psychologically speaking, are spent in storing experiences, inhibiting experiences, and bringing experiences up again. These three processes are the warp and weft upon which our manifest psychological selves form a shifting pattern of embroidery. I use the word " embroidery " advisedly, for our everyday conscious selves are calculated to be presentable even if they are based on what convention regards as vicious material.

The process of inhibition is a most important one, since so much of our education consists in the inhibition of impulses, ideas and thoughts, to which we are taught never to give expression. We should not consider civilisation without its concomitant hypocrisy.

Try judging the character of your acquaintances by their behaviour when they are somewhat inebriated; the thin veneer of civilisation is one of deceitful inhibitions, and is easily soluble in alcohol.

Blues Committee

AT a meeting of the Blues Committee on Monday, 12th August, the following " Blues " were passed :—

Cricket.—Full Blue : A. D. Willis, R. L. Skea. Half Blue : W. Wylde, A. L. Young, L. G. Morey, P. H. Birks, G. O'Gorman.

Tennis.—Half Blue : F. J. Piercy, W. B. Southwell, H. R. S. Harley, J. Archer, W. Hughes.

Sailing.—Full Blue : J. M. Alexander.

C. S. DARKE, *Hon. Sec.*

Correspondence

The League of Nations

To the Editor of the GAZETTE

SIR,—After reading Mr. Layton's letter in your issue of August 17th, I turned instinctively to ascertain the address from which it was written, in the world in which he lives and to which he invites you to change. To my surprise I found that you were there already!

Since the war, many building estates have been developed, to which thousands have flocked in their search for a "Dream House" at £25 down and the rest as rent. As everybody knows, mankind in the mass consists of two great classes—those who "rush in" and those who "fear to tread." Many of the former are now greatly worried because it grows increasingly plain that it is more than doubtful whether their houses will continue to stand up until the last instalment is paid.

Is Mr. Layton satisfied with the stability of his "Dream House" in the wonderful world to which he invites you?

Just let me give a little instance in connection with Abyssinia. I have recently returned from the East. By the middle of May last I myself had counted upwards of 100,000 Italian troops *en route* for Abyssinia, "with muskets, canon, mortars, poulder, shott and all other utencils in proporcioun," as the old writers used to say.

It will be like *Punch's* remark upon an extract from a ladies' paper, describing how to convert the remnants of certain outworn garments of one kind into new ones of another, which concluded after this fashion: "If you do not consider the garment such as you would like your own chicks to wear, it will make a welcome addition to the Charity bag." *Punch* said: "Now that we've taken all this trouble to make 'em, somebody's jolly well *got* to wear 'em." *Verb. sap.*

Unfortunately, the man-made world in which Mr. Layton invites you so insouciantly to play the part of the Fly to his Spider is situated on a plane so high that its denizens—I almost said "inhabitants," but Mr. Layton will appreciate the difference—cannot see what is taking place in that Greater Universe created by the Almighty.

Until Evolution shall bring about such changes as will abolish the ordinary natural man's instinct to react in kind when he gets a punch on the jaw, the League of Nations and its ideals are somewhat premature.

As a result of the Great War, there is no nation in the world which can afford to engage in expenditure on a scale of this magnitude merely as a precautionary measure and without a hope of seeing some return for it. No matter how good the intentions of the League of Nations may be, or how untiring its efforts to justify the money which has been spent on it and indeed its very existence, *it is not going to prevent this war.* Anybody who has seen, as I have, the scale upon which preparations are being made can have no two opinions about it.

Nature is essentially brutal because she is wide in her outlook and her operations are directed to preserving species rather than individuals. Warfare is as universal in the whole of creation as the Universe itself. Even the vegetable kingdom is at war with mankind.

Yours, etc.,
H. M. STANLEY TURNER,
Wing Commander, R.A.F. (retd.)

The Peace Ballot

To the Editor of the GAZETTE

SIR,—I was very pleased to read Mr. Layton's letter in your issue of the 17th instant, and write to tell you that I, myself, am in hearty accord with him.

Some little time ago I was disgusted with the views expressed in "Passim" relating to the recent Peace Ballot. It occurs to me that if the reading—or shall I say thinking?—section of the public discontinued their support of the daily press and journals which are continually trying to belittle the efforts of the League of Nations, then some real progress towards peace might be made.

Evidently I am not alone, and, as a mild form of protest, am considering whether or not I will renew my subscription to a journal which expresses such sentiments.

Yours, etc.,
H. LLYWELYN JONES.

Gowerdale,
Lloyd Street,
Llandudno.

*** We are sorry to have disgusted our correspondent, and would be interested to hear a reasoned expression of his views.—ED.

Clerks for Residents?

To the Editor of the GAZETTE

SIR,—May I suggest that a secretary or clerk should be provided for the use of the Residents to answer professional letters written to them? It is becoming common knowledge amongst Guy's men in private practice that letters written to the Residents asking them kindly to consider admitting a patient under their respective physician or surgeon are treated with contempt, and no reply is sent for weeks or months, and frequently not at all!

I have recently written to a Resident asking if a bed could be found for a woman with an ovarian tumour with some urgent symptoms. No notice has been taken of my letter.

Fortunately I have been able to get the patient into another hospital, where my request was received with every consideration and promptness, and I was put into touch with the surgeon who kindly operated for me. *Verb. sap.*

This is not the first time that my letters have remained unanswered, and I, for one, shall not trouble Guy's again.

No one expects impossibilities or vacant beds where they do not exist, but I can assure these Residents when their time comes to vacate their exalted position and join the lowly ranks of general practitioners, that they in their turn will expect and appreciate some little courtesy from their juniors in age and experience.

Yours, etc.,

H. DUFFETT.

Sidcup, Kent.

(We much regret that, in the temporary absence of both the President and Vice-President of the Residents on their summer holiday, we are unable to publish a reply to our correspondent in this number.—ED.)

Native Surgery

To the Editor of the GAZETTE

SIR,—In a book entitled "Secrets of the Red Sea," by Henry de Monfried, is the following remarkable passage, which at least shows the ingenuity of man.

The following operation was performed upon a native who had received a spear thrust in the epigastrium. A Somali "wizard" was the operator, and among his "tools" was a bottle containing big brown ants of the fighting kind, with horned heads as big as a grain of wheat and "armed with mandibles which opened like threatening pincers as soon as an obstacle was presented to them." These ants were put to a very ingenious and practical use during the course of the operation. The "surgeon," having made an incision in the abdomen, drew out the pierced stomach, and his assistant held together the two edges of the tear. The Somali then took an ant and presented it to the edges, which it bit through with its mandibles. Immediately its head was nipped off by the surgeon, and the head remained fixed. "It was the first stitch of the sewing up, and he proceeded to place twenty others along the tear of the stomach." These would be absorbed like catgut.

If the use of brown ants became general in our own hospital for gastrectomy, it would be interesting to note the effect on the popularity of this type of operation, owing to the fact that the big brown ant might prefer the anatomy of the surgeon to that of the patient.

Yours, etc.,

D. H.

Wimbledon, S.W.

List of Rugby Fixtures, 1935-36

1935.	*Opponents.*	*Ground*
Sat., Sept. 7	Trial Game	Home
„ „ 14	Old Paulines	Home
„ „ 21	Catford Bridge	Home
„ „ 28	Coventry	Away
„ Oct. 5	United Services, Portsmouth	Away
Wed., Oct. 9	Dr. Windsor Lewis's XV	Home
Sat. „ 12	Old Alleynians	Home
„ „ 19	Aberavon	Away
Mon., „ 21	Neath	Away
Sat., „ 26	Harlequins	Away
Wed., „ 30	London Hospital	Home
Sat., Nov. 2	Old Blues	Home
Wed., „ 6	Cambridge University	Away
Sat., „ 9	Birkenhead Park	Away
Wed., „ 13	St. Bartholomew's Hospital	Away
Sat., „ 16	Rosslyn Park	Home
Wed., „ 20	University of London	Home
Sat., „ 23	Gloucester	Home
Wed., „ 27	St. Thomas's Hospital	Home
Sat., „ 30	The Army	Home
„ Dec. 7	Richmond	Away
„ „ 14	Liverpool	Home
Wed., „ 18	United Services, Portsmouth	Home
Sat., „ 21	Old Merchant Taylors	Home
„ „ 28	London Scottish	Home
1936.		
„ Jan. 4	(*International* v. *N.Z.—Twickenham*)	
„ „ 11	Birkenhead Park	Home
„ „ 18	Bedford	Home
	(*International* v. *Wales—Wales*)	
„ „ 25	Gloucester	Away
Wed., „ 29	Cambridge University	Home
Sat., Feb. 1	Aldershot Services	Away
„ „ 8	Coventry	Home
	(*International* v. *Ireland—Ireland*)	
„ „ 15	Old Millhillians	Home
„ „ 22	Old Whitgiftians	Away
„ „ 29	Old Cranleighans	Away
„ Mar. 7	Aberavon	Home
„ „ 14	Bedford	Away
„ „ 21	(*International* v. *Scotland —Twickenham*)	
„ „ 28	London Irish	Away

Hospital Information, etc.

Notices

PRIMARY FELLOWSHIP COURSE

A Combined Course in Advanced Anatomy and in Advanced Physiology will be held in common with St. Bartholomew's Hospital Medical College and St. Thomas's Hospital Medical School, during the Autumn of 1935, and, in order to restrict the size of the classes to manageable proportions, only Students and Post-graduates of the Schools concerned will be admitted.

The Classes will meet as follows :—

St. Thomas's Hospital.—September 16th to October 4th inclusive, on Mondays, Wednesdays and Fridays. Physiology, 2 p.m. to 3 p.m.; Anatomy, 3 p.m. to 4.30 p.m.

Guy's Hospital.—October 7th to October 25th inclusive, on Mondays, Wednesdays and Fridays. Anatomy, 2 p.m. to 3.30 p.m.; Physiology, 3.30 p.m. to 4.30 p.m.

St. Bartholomew's Hospital.—October 28th to November 15th inclusive, on Mondays, Wednesdays and Fridays. Anatomy, 2 p.m. to 3.30 p.m.; Physiology, 3.30 p.m. to 4.30 p.m.

Further details may be obtained from the Medical School Office. Guy's men wishing to join the Course should send in their names to the Dean.

T. B. JOHNSTON, *Dean.*

M.R.C.P. EXAMINATION

The attention of old Guy's men who wish to take the M.R.C.P. Examination in October, 1935, is drawn to the arrangements which have been made between the Medical Schools of St. Thomas's Hospital, St. Bartholomew's Hospital and Guy's Hospital, concerning which further details may be obtained from the Dean.

T. B. JOHNSTON, *Dean.*

Pass List

UNIVERSITY OF LONDON.—M.D.

July, 1935.

BRANCH I.

Medicine.

H. G. McComas — J. L. Woodhouse

SECOND (M.B., B.S.) EXAMINATION FOR MEDICAL DEGREES.

July, 1935.

PART I.

O. H. E. Baelz — R. W. Kesson
C. G. Baker — A. H. Knight
P. H. Beales — O. G. Lane
A. D. Bell — D. H. Meldrum
A. Bloom — D. E. Meredith
G. C. Bough — R. P. Mills
A. R. Bradley — E. J. A. Needham
D. M. F. Carter — D. A. Osborn
G. H. D. Channing — T. G. Pritchard
R. B. Clayton — H. Rees
C. K. Cole — C. J. St. Cin
A. M. Dawes — L. G. Scott
A. J. Drew — M. K. C. Shrapnell
R. H. Evans — R. Tilley
P. Forgacs — J. M. W. Wells
F. N. Glover — R. West
Peter Greenstreet — E. H. Williams
M. F. Hart — J. N. Williams
W. J. T. Howard — C. W. Wilson
J. A. Jones — J. K. Wood
G. C. Kennedy — J. A. Yates

UNIVERSITY OF LONDON. FIRST EXAMINATION FOR MEDICAL DEGREES FOR EXTERNAL STUDENTS.

July, 1935.

J. E. Gilbert — W. J. Head
H. P. Guerrier — E. J. A. Needham

FIRST EXAMINATION FOR MEDICAL DEGREES.

July, 1935.

P. Baxter — A. M. McCall
C. Bucknall — N. M. Midgley
J. C. Bulstrode — G. O'Gorman
C. K. Cole — K. W. N. Palmer
W. G. Cross — G. H. Pearson
E. R. Davies — A. F. Rushforth
D. M. Douglas — W. H. Spencer
W. R. Dyke — A. B. Stratton
P. Forgacs — J. G. Stubbs
O. C. Fung — J. A. Sutton
S. W. Hinds — H. A. Thomas
J. C. Houston — J. A. E. Watts
J. W. Lee — D. R. C. Willcox
K. B. Lole — J. R. D. Williams

SECOND EXAMINATION IN DENTAL SURGERY.—*PART I.*

(For Internal and External Students.)

July, 1935.

Pass.

P. A. Chandler — A. Walton
F. McCombie

The following Students are credited with Anatomy and Physiology :—

J. C. Coe — N. S. Harris
D. M. Cushing

SECOND EXAMINATION IN DENTAL SURGERY.—*PART II.*

July, 1935.

E. H. Cooper.

Appointment

Geoffrey M. Housden, M.B., B.S.(Lond.), Assistant Anæsthetist, Miller General Hospital, Greenwich.

Changes of Address

Dr. Maurice Coburn, Crossways, The Bishop's Avenue, N.2. *Speedwell* 8676.

Marriage

GILLIES—SLEEMAN.—On 7th August, 1935, at St. Mary's Parish Church, Finchley, London, Alan Robert Gillies, L.D.S.(Eng.), of 269, West End Lane, West Hampstead, London, N.W.6, to Peggy, daughter of Mrs. D. Sleeman, of 9, Sherrardspark Road, Welwyn Garden City, Herts.

Eds. { P. W. C. / M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX *14th September* 1935 *Number* 1230

PASSIM

WE feel that more should be known of the excellent work which is being done by the Appointments Committee in attending to the interests of Guy's men. During the year 186 medical and 27 dental appointments have been arranged. Such is the excellent reputation which the Committee has established in the country that they have no difficulty in placing men from the Hospital, and every effort is made to send the most suitable man for the particular position. Locums, assistantships, partnerships, hospital appointments, appointments abroad, and jobs as ship's surgeon have all been arranged, and this summer the demand has greatly exceeded the number of men available, a state of affairs which can be remedied by a better realisation throughout the Hospital of the activities of the Committee.

A study of the Notice Board, with its advertisements, outside the Medical School Office always repays. There is an entertaining variety in the jobs that are offered. The eye slips, perhaps too easily, from the prospect of six months casualty officer—board, residence and £70 a year—to the vacancy for a ship's surgeon on a cruise to the West Indies. Earlier in the summer there was the "leading Berlin gynæcologist" who wanted to pay the expenses of, and entertain in his home for three months, a "senior student." In exchange, the "senior student" was to expound his views on modern British gynæcological treatment. It sounded easy money to us.

The board has at the moment a definitely "Wide World" air. It starts mildly enough with the naïve appeal of the South Australian Government for house officers to work in Adelaide at £100 a year. We pass to more remote places with the advertisement of the "Discovery" Committee for a surgeon for twenty months at £450 a year, and become hotter with the British Ambulance Service, who appear to be about to commence operations in Abyssinia —on which side it is not clear. They appeal for voluntary work on "humanitarian" grounds, and pay will in no case exceed £250. Though humanitarian, some experience of the Firm Hand and "of handling natives" is required, and an East African language is also desirable. An explicit reference, of which there is none, to the position of the volunteers under the law which prohibits the participation by British subjects in any war between countries at peace with His Majesty's Government might remove the doubts of many waverers.

For ourselves it is the gentlemen who want a fortnight's locum in their South-Coast practices who mainly attract.

WE heartily congratulate Dr. Ryle on his appointment as Regius Professor of Physic at the University of Cambridge. Our congratulations are mixed with deep regret that his appointment will necessitate the termination of his office as Physician to the Hospital. We lose a teacher and clinician with a very signal appreciation of the role of the physical senses in medicine and a great ability to convey to others his knowledge of clinical science.

Dr. Ryle will be the first Guy's man to occupy the Regius Chair of Physic at Cambridge. Though beginning his duties in October, he will not take up permanent residence in Cambridge until Christmas, and will thereafter continue to carry on some consulting practice in London. On September 20th he will deliver his last clinical lecture, which will be a review of cases illustrating the late effects of syphilis, and will appear subsequently in the *Gazette*.

Dr. Ryle, whose father, Dr. R. E. Ryle, M.D., was a Guy's man, entered the Hospital in 1907, qualified in 1913, and was successively A.H.S. to Mr. Hughes, Out-Patient Officer, and H.P. to Dr. Fawcett. He won the Treasurer's Gold Medal in Medicine and the Gold Medal in the London M.D. During the war, from 1914 to 1918 he served as a Captain in the R.A.M.C. In 1920 he was appointed Assistant Physician, and Physician in 1929. Since 1933 he has been Physician to the Royal Household. In 1925 he

was Goulstonian Lecturer to the Royal College of Physicians, and in 1932 Hunterian Professor to the Royal College of Surgeons.

THE unhappy accident which resulted in the destruction by fire of the Grand Stand at Honor Oak Park has necessitated the postponement of the match against a side of Dr. Windsor Lewis's which was to have opened the new pavilion and ground and to have been followed by a Rugger Club's Dinner.

The opening fixture of the season will now be played against the Old Paulines at Thames Ditton this Saturday.

At a recent meeting of the Club's Union Council, at which the architect was present, it was decided to proceed with the erection of a new stand. This is to be of concrete, a little smaller than the old one and will seat five to six hundred spectators. Improvements are to include protection for the first few rows against the rain, a telephone, an office and conveniences. It is hoped to have it ready for the opening match to be held against Cambridge or Gloucester in January. In the meantime, for Home matches, which are till January in the minority, seats will be provided along the touch-line.

WE publish in this number "Early Practice in Van Diemen's Land," a description of the colonial practice of a Guy's man—or, more strictly, Guy's and St. Thomas's man, as he was at both Hospitals before the schism—a pupil and disciple of Calomel Currie, and apparently a very virile character withal, who spent his time in litigation, and in the publication to a community, cut off from other news, of descriptions of his more dramatic cases and defences of his professional conduct. Dr. Crowther's family maintained their connection with his two parent hospitals—a son was at St. Thomas's and three grandsons, one the father of the author, were subsequently at Guy's.

WE congratulate the Tennis VI who, under the captaincy of C. A. Boucher, have won the Inter-Hospitals Tennis Cup for the first time in recent years. They defeated the London Hospital in the Final by 12 games to love. To reach the Final they had met and defeated King's, St. Thomas's, and Charing Cross.

WE welcome to the new Chair of Dental Prosthetics in the University of London Professor H. R. B. Fenn, L.D.S., D.D.S., who comes to us from Liverpool University, and Mr. J. Whillis, M.D., M.S. (Dunelm), F.R.C.S., our new full-time Reader in Anatomy, and late Lecturer in Anatomy at the University of Durham.

ON September 30th, Dr. Philip Seymour-Price will deliver a lecture on "Some Notes on General Practice." This lecture, which should be of interest to all students, will take place at 1 p.m. in the Anatomy Theatre.

ON September 26th, a Dance is to be held at the Nurses' Home. Tickets, which are 3*s*., may be had on application to staff nurses in Out-Patients, Surgery or Theatres.

Dyspnœa

A Clinical Lecture delivered at Guy's Hospital by E. P. Poulton, Esq., M.D., F.R.C.P.

GENTLEMEN,—Dyspnœa may be defined as "the consciousness by the patient of the need for increased respiratory effort," and excessive efforts at breathing will be observed. It takes place when there is either increased demand upon the lungs or when the organs have lost some of their normal capacity of exchanging oxygen and carbon dioxide.

Anæmia and other conditions where the carrying power of the blood is interfered with, such as carbon-monoxide poisoning or met-hæmoglobinæmia, will cause dyspnœa on exertion, but this is a subject for a clinical lecture by itself and I will not deal with it further here. Perhaps the best way of getting a wide view of the subject is to consider it in connection with possible disturbances of the acid base-balance of the blood which are given in the Table. To understand this Table there is a most important equation which indicates the factors on which the acidity of the blood depends :—

$$C_H\text{—constant} \times \frac{\text{free } CO_2.}{\text{bicarbonate concentration.}}$$

C_H, *i.e.*, the hydrogen ion concentration of the blood, increases with the amount of free carbon dioxide dissolved in the blood, and also it increases as the bicarbonate of the blood diminishes—the so-called alkaline reserve. This is known as acidæmia. When the hydrogen ion concentration is low, in the reverse condition of low free CO_2 or high bicarbonate, there is alkalæmia. The terms acidosis and alkalosis have been used in such a number of different senses that they are best limited to the *processes* which tend to the production of more acid or more alkali in the body. The "alkaline reserve," or the "blood

bicarbonate," or the " carbon dioxide " which is " fixed " by bases in the blood, are all terms for L. J. Henderson's valuable conception which was introduced into clinical medicine by Van Slyke.

Dyspnœa, then, may be produced by a diminution in the blood bicarbonate leading to acidæmia. In 2*a* this may be brought about by the ingestion of dilute hydrochloric acid or substances like ammonium chloride or calcium chloride, which are converted into acids in the body. With ammonium chloride the ammonia is converted into urea by the liver, and free hydrochloric acid is liberated, with calcium chloride the calcium is converted into calcium carbonate in the intestine and free hydrochloric acid is absorbed.

Both these substances are used clinically, particularly in the treatment of pyelitis and pyelonephritis. On the whole, calcium chloride is the best, and may be given in formalised gelatin capsules containing 7½ grains each or jalol coated pills of 5 grains ; 15 grains five times a day is the full dose. Clinically these acids are not given in sufficient dosage to produce dyspnœa, but this was a symptom noticed by J. B. S. Haldane when he took these substances himself in large amounts, and so provided us with a simple artificial method of producing acidosis. The formation of lactic acid in exercise need not be further dealt with here, but ketosis, which is the production of aceto-acetic and β hydroxy butyric acids, is of considerable clinical importance. Not only do we get it in diabetic coma, when it produces the characteristic air hunger, but also with severe vomiting, as in cyclical vomiting, when it is commonly observed in the urine *before* the vomiting begins, indicating that the vomiting is not primarily responsible for it. It is commonly met with in small amounts when there is not sufficient carbo-hydrate being utilised in the body, but not in amounts enough to produce dyspnœa. The other clinical features of diabetic coma—the rapid feeble pulse, the collapsed veins, the dry skin, diminished intra-ocalar tension, concentrated blood, and the smell of acetone in the breath—are all very characteristic, but it must be remembered that the kidneys are apt to be affected so that uræmia may play a part in diabetic coma. Besides the necessity of giving insulin and glucose, plenty of fluid must also be given. I first realised this on treating a patient in the pre-insulin days. I had given her an intravenous injection of bicarbonate, which was the standard treatment for coma, though it very rarely brought the patient round, and it had no perceptible effect in this case. I had with me a long nasal tube, as I thought the intravenous injection might be supplemented by running fluid directly into the stomach or, better, into the duodenum. An isotonic solution of bicarbonate was given and the effect was most dramatic ; the patient became fully conscious to relapse again during the night, as, of course, there was no insulin with which to continue the treatment. Thus the administration of fluid is a most important part of the treatment, and in an unconscious patient it can be given by a fine tube through the mouth or through the nose.

A pint of isotonic solution should be given every hour, but it is necessary to keep a look-out on the bases of the lungs to prevent pulmonary œdema. The patient should lie over on the right side so as to allow the fluid to gravitate towards the duodenum, but a warning must be given that sometimes, owing to pylorospasm, the fluid does not get through to the intestines, but remains in the stomach, distending it. This may, perhaps, be avoided by noting whether the upper abdomen becomes full and whether there is a marked succussion splash. It is very important to keep these patients in the recumbent position owing to the feeble circulation. Incidently, when a ketogenic diet is employed for treating pyelitis, plenty of protein should be ordered as well as fat, because

TABLE.—*Types of Disturbance of Acid-Base Balance.*

(1) *Affecting* CO_2.

(*a*) *Increase.* Increased formation—violent exercise. Impaired elimination. Depression of respiratory centre by narcotics, and sleep. Interference with respiration (disease of heart or lungs). Breathing CO_2.

(*b*) *Decrease.* Overbreathing—voluntary, in hysteria, emotional tetany, as a result of peripheral stimuli, in fevers, at high altitudes, in pure cardiac dyspnœa.

(2) *Affecting Bicarbonate Concentration.*

(*a*) *Decrease.* Excessive ingestion of acids, or potential acids (NH_4Cl or $CaCl_2$).

Excessive formation of acids—lactic acid in exercise.

Failure of oxidation of acids—especially aceto-acetic acid.

Failure of excretion of acids in nephritis.

Loss of base.

(*b*) *Increase.* Excessive ingestion of bases ($NaHCO_3$) or potential bases (*e.g.*, sodium citrate).

Loss of acid, *e.g.*, gastro-colic fistula.

fat by itself is a rather poor ketogenic agent. At the bottom of 2*a* there is a heading, "Loss of base"; an instance of this is the excessive loss which may take place through the urine in a severe case of untreated diabetic coma, and it is reasonable to make this good in the treatment of coma. In this connection the following solution may be used with advantage, to be administered by a stomach tube: Glucose, 3 per cent.; sod. bicarbonate, 0.5 per cent.; potassium chloride, 0.05 per cent.; calcium chloride, 0.03 per cent.

A dyspnœa is caused by deficiency of the pulmonary function when carbon dioxide is retained in the blood, and there is anoxæmia as well. The carbon dioxide retention is a more important cause of the dyspnœa than is the anoxæmia, since it leads both to quicker and deeper respirations, while anoxæmia only increases the rate of respiration without increasing the depth. However, anoxæmia makes the respiratory centre more sensitive to carbon dioxide, so these two factors are closely related. Deficient pulmonary

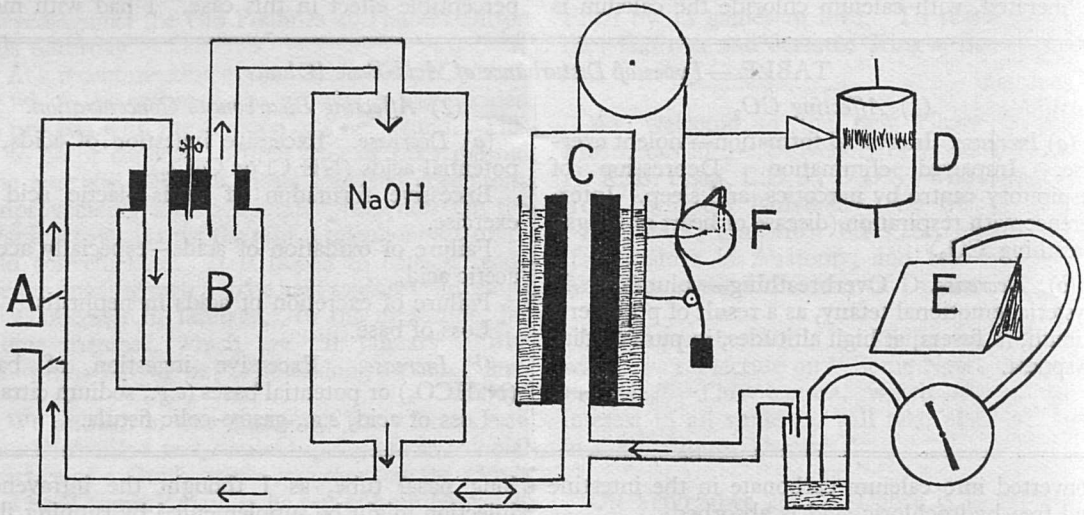


Fig. 1

The air hunger of uræmia is indistinguishable from that of diabetic coma, but in this instance the function of the kidney fails, so that the acid products of metabolism, particularly phosphoric acid and sulphuric acid, accumulate in the blood; these can be diminished by ordering a low-protein diet. One of the most important points in differential diagnosis is to distinguish the uræmia of primary kidney disease from the uræmia that may result from intestinal obstruction. Clinically with the vomiting and increased intestinal movement the two may be indistinguishable, and in both the blood urea is high. But in the primary kidney case there is an acidæmia with a diminished alkaline reserve, whereas in the intestinal case the tendency is towards alkalæmia, and the alkaline reserve is normal or definitely raised. The distinction is important not only from the point of view of prognosis, but from that of treatment, since the intestinal condition is capable of relief, but when the kidneys are so bad as to cause uræmia there is often little to be done, apart from operation, when the uræmia is due to obstruction of urinary flow.

function may be due to obstruction of the intake of air, as in carcinoma of a bronchus, or to more general narrowing of the bronchi as in bronchitis or asthma, or to pulmonary infiltration as in pneumonia and phthisis, or to generalised pulmonary œdema, which hinders exchange in the lungs, or to a diminution of the respiratory surface as in emphysema. In many of these cases the dyspnœa may be relieved by a shunt mechanism. For instance, in the early stages of lobar pneumonia there is a free circulation through the affected lung which means that much of the blood reaches the aorta without being aerated, and will there be mixed with the fully aerated blood from the healthy part of the lung. Thus respiratory distress with lividity is commonly observed at the beginning of the disease. Later on the diseased lung is largely cut out of the circulation, so that the blood reaching the aorta is fully aerated, the patient becomes a good colour, the dyspnœa is less, and yet the temperature may still remain high. This shunting of the blood is particularly noticeable in the treatment of phthisis by pneumothorax. It has been found experimentally in phthisis that

the percentage saturation of the arterial blood may vary from case to case between the normal, *i.e.*, 95 per cent., down to 80 per cent., and when the arterial saturation is reduced the carbon dioxide content of the arterial blood is increased. Pneumothorax, when it occurs spontaneously with a healthy lung, leads to sudden severe pain and urgent dyspnœa, and yet when it is used in the treatment of phthisis, cyanosis and dyspnœa may be relieved. The explanation of this paradox is that in the latter case the infiltrated lung has been allowed to collapse, so that the blood circulating through this lung, which is the cause of the respiratory distress, is cut down in amount.

The depression of the respiratory function due to morphia, although it will decrease the carbon dioxide in the blood, will, of course, diminish the respiration, and so will not cause dyspnœa, but respiratory distress may be observed from mechanical interference with the movements of the chest, as in pleural effusions (spontaneous pneumothorax has already been mentioned) and compression of the chest, as in accidents, etc.

Many cases of respiratory deficiency do well when treated with oxygen, and, although the oxygen tent provides the most efficient means that we have at present for administering oxygen and is particularly valuable in the case of children, yet some recent observations by Mr. T. W. Adams and myself have confirmed the fact that efficient nasal administration gives quite good values for the oxygen in the alveolar air. The best apparatus appears to be a forked nasal tube which only just enters each nostril as described by Davies and

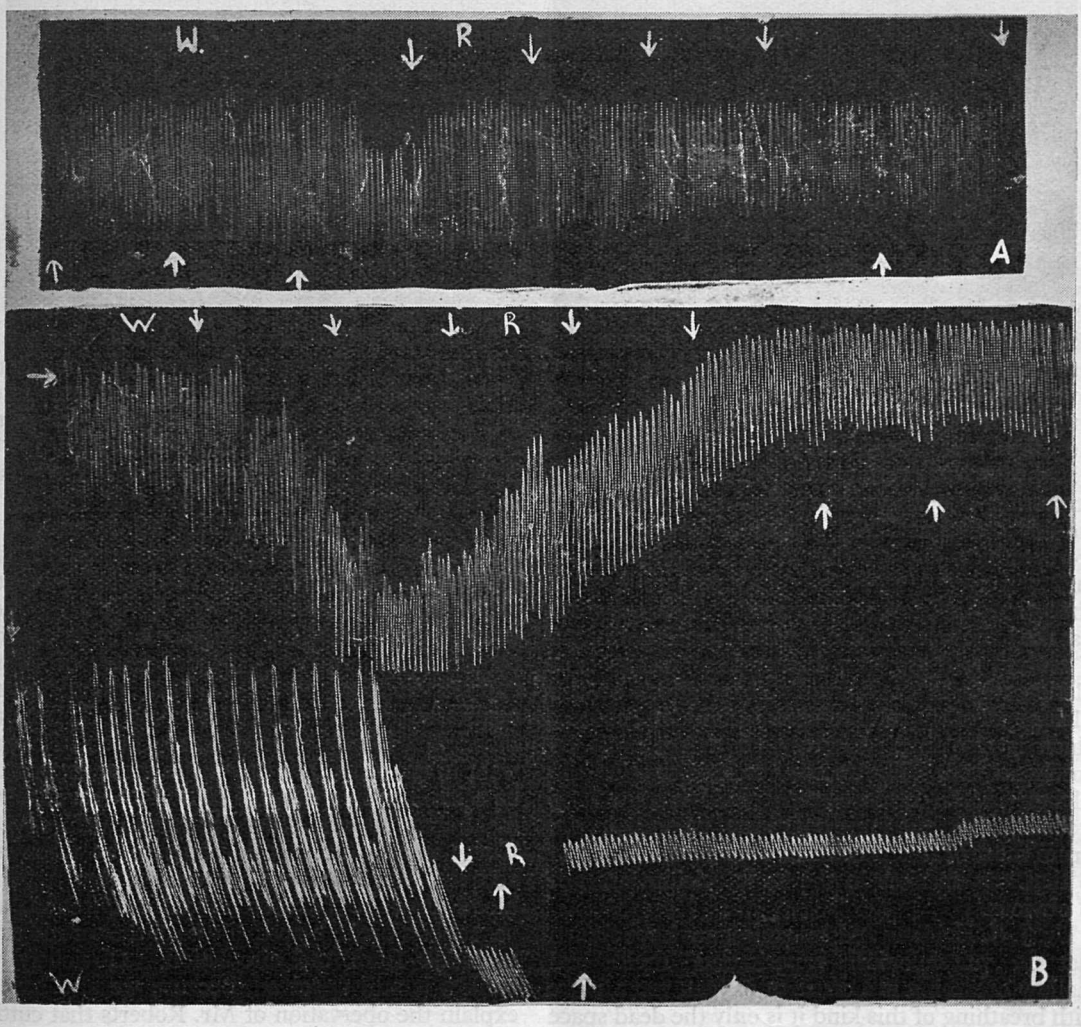


Fig. 2

Gilchrist. When oxygen is supplied at the rate of 4 litres per minute values up to 40 per cent. in the alveolar air show a satisfactory increase over the normal value of 18 per cent. But I hope to deal further elsewhere with the question when the oxygen tent should be used, and when nasal administration will be adequate.

1*b*.—Spontaneous overbreathing, which is often hysterical but may result from peripheral painful stimuli, and perhaps in fevers is sometimes a cause of dyspnœa and is commonly followed by tetany, which is attributed to alkalæmia. The other main type of tetany is due to defective parathyroid secretion, and is associated with a low blood calcium or what is more important, a low ionic calcium. These two types—the alkalæmic and the parathyroid tetany—have now been brought into connection with one another by some interesting observations of Professor Langmead and his colleagues. In a case of tetany due to overbreathing the calcium of the cerebro-spinal fluid was found to be low and rose to normal when the condition was arrested. This suggests that the ionic calcium is always low in all conditions of tetany, and we may bring these results into relation with E. C. Warner's observations on the calcium of the cerebro-spinal fluid in chorea, which is also low. Chorea and tetany must be closely related. The reason for investigating the calcium in the cerebro-spinal fluid is that it is probably all in the ionic condition, whereas in the serum most of it is present in organic combination so that any changes in the ionic calcium are not so obvious.

Dr. J. S. Haldane and his colleagues have shown that in physiological experiments rapid and shallow breathing is a cause of oxygen want, since with breathing of this kind it is only the dead space which is ventilated and not the deeper recesses of the lungs. Experimentally, rapid and shallow breathing has been produced by injecting small seeds into the blood-stream of animals so that the pulmonary capillaries become blocked, but it is rather doubtful whether in pathological conditions rapid and shallow breathing is very important as a cause of oxygen want. Thus R. Hilton found that the rapid breathing in pneumonia was not particularly shallow—an important observation, since it was suggested by Dr. J. S. Haldane that anoxæmia in pneumonia might be brought about by this means.

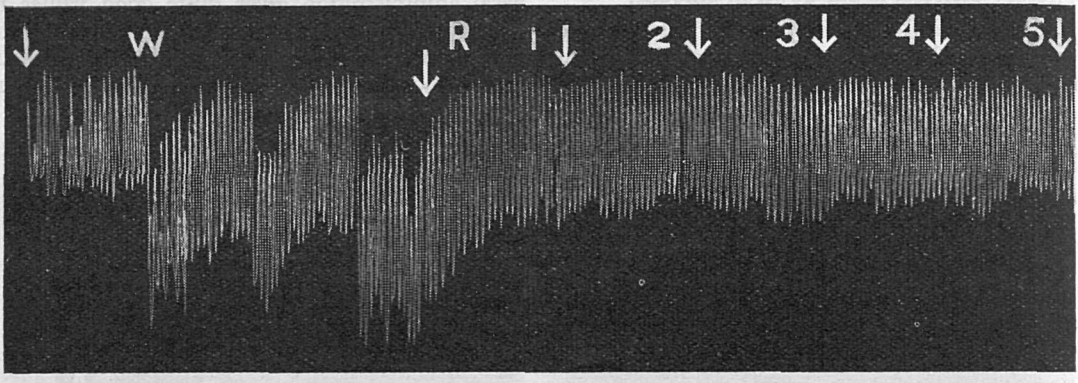


Fig. 3

In cardiac failure there may be two elements in the dyspnœa. Owing to the stasis of blood in the lungs there is some œdema which prevents interchange of gases and causes a mild degree of the pulmonary deficiency already described in 1*a*. This is probably not a very important cause, and in many cases it has been found that the CO_2 in the arterial blood is definitely below normal, so that there is mild alkalæmia—a condition that falls into 1*b*. Up to the present the usually accepted explanation is that emphasised by Pearce; there is such a slow circulation through the respiratory centre that there is a local deficiency of oxygen and an increase of CO_2. This stimulates the respiration, which washes out some CO_2 from the blood, but hardly affects the condition of oxygen want in the centre, as very little more oxygen can be taken up by the lungs since the arterial blood is already nearly fully saturated with oxygen. There is also the carotid sinus to be taken into account, since it has been shown that a fall of blood pressure here stimulates respiration, and yet rabbits breathe normally with the carotid sinus excluded from the circulation. Obviously the subject is still unsolved, because we also have to explain the obervation of Mr. Roberts that cutting off the circulation to the respiratory centre stops

respiration altogether, and it is impossible to imagine a more effective way of producing a local venosity in the centre than this.

The treatment of cardiac dyspnœa is beyond the scope of this article, but it may be mentioned that oxygen does good in the elderly myocardial case when there is coronary sclerosis, and in all cases when there are associated pulmonary lesions such as œdema and bronchitis, but does not do so much good in the young subject with a failing rheumatic heart. Attention may also be directed to the new alkaloids of digitalis which are valuable in acute cases since an effect is produced within one or two hours: (*a*) Digoxin is prepared from digitalis, and may be given by mouth or by intravenous injection, the dose being 0.75 to 1.5 milligrams in alcoholic solution diluted 10 times with normal saline; (*b*) Digitalium verum is prepared from the seeds, 5 milligrams being equivalent to 0.75 of digoxin and to 85 minims of the standard tincture of digitalis.

The dyspnœa at high altitudes is the result of anoxæmia, which washes CO_2 out of the blood.

Finally I must deal with paroxysmal dyspnœa. This is a common condition. It very often takes place at night and may be the dyspnœic phase of Cheyne Stokes breathing or associated with an attack of asthma, hence the term cardiac asthma by which it is also known. My recent interest in this condition has arisen in rather a roundabout way. Some years ago Dr. Maurice Campbell and I examined the respiratory exchange after exercise of a patient with myocardial disease by means of a closed circuit apparatus containing a spirometer and an absorbent cannister for CO_2 (Fig. 1). The principle of the apparatus will be familiar to you as it is now used in anæsthetics. As carbon dioxide produced by the patient is absorbed by soda lime in the tin, marked Na OH and oxygen is allowed in from the bag E, through a water valve, the volume of the air in the apparatus will remain stationary, except that the spirometer C moves up and down with each respiration. In one experiment the patient took muscular exercise which consisted in mounting on to a step six times each minute, breathing all the time into the apparatus (Fig. 2*b*). A stethograph was fastened round the chest so as to measure the excursions of the chest wall with breathing (the lowest tracing). During the second minute of exercise the volume of air in the spirometer gradually increased, reaching a maximum during the third minute; this is shown by a fall in the tracing. The circumference of the chest remained unaltered.

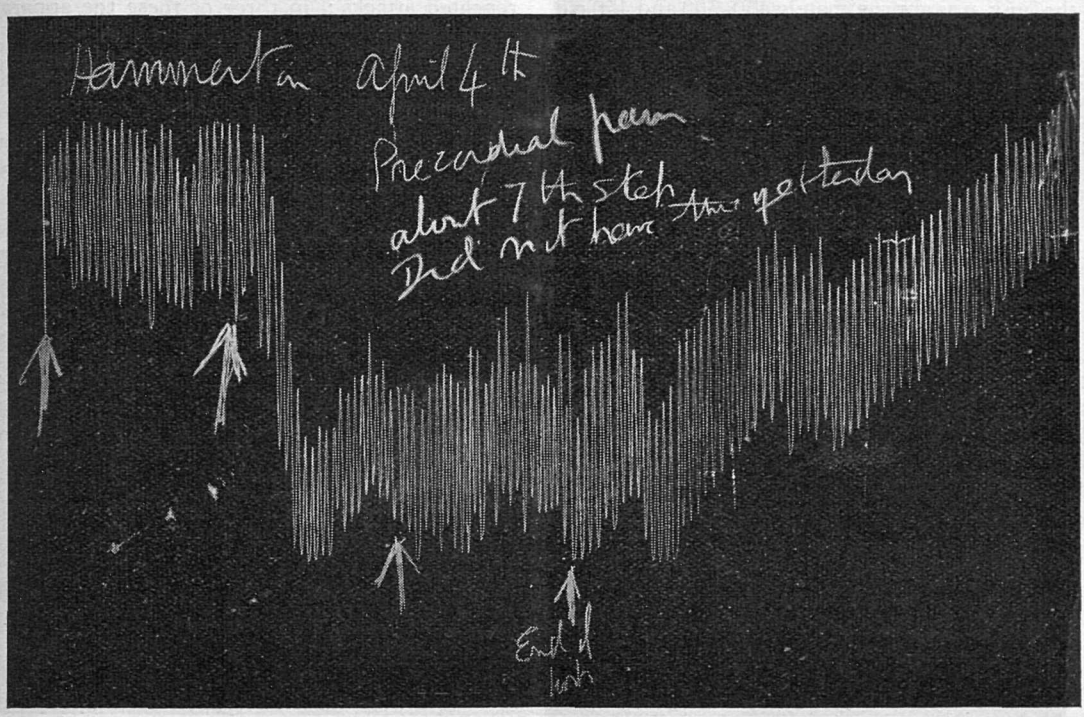


Fig. 4

The only possible explanation was that there was a sudden accumulation of blood in the lungs as the result of exercise, and this could only come about because the right ventricle continued to act well, while the left ventricle partially failed. When treated with oxygen, this pulmonary congestion was hardly apparent, as shown in the top tracing (Fig. 2*a*). Other tracings were obtained which again showed failure of the left ventricle. For instance, in Fig. 3 the tracing falls in a series of steps showing partial recovery between each fall. The volume of air expelled, which is the same as the extra volume of blood accommodated in the lung, was approximately 450, 300 and 450 c.c. at each step. In a tracing on April 4th some præcordial pain was experienced during the fall of the tracing (Fig. 4). Three days later, when the experiment was repeated, the fall was only noticed at the end of the work, so that the patient reacted more favourably than he did three days earlier (Fig. 5).

apparatus for treating pulmonary œdema mechanically. It consists of a blower—an Electrolux blower answers the purpose—which supplies air under positive pressure through an opening to a mask; the air escapes through another opening, fitted with a valve which acts against a light spring. The speed of the blower is regulated by an adjustable resistance in the circuit. The amount of positive pressure is indicated by a manometer fitted to the mask.

I have now tried this positive pressure apparatus in 17 cases, and here is a brief summary. There were seven cases of bronchial asthma with severe repeated attacks; in three of these the apparatus was either of no use or an injection of adrenaline was definitely preferred. Four of the patients did well with the apparatus. One of them is a remarkable case; he was 20 years old and admitted into John with a very severe attack which could not be stopped by adrenaline as ordinarily used. The attack was completely arrested by means of

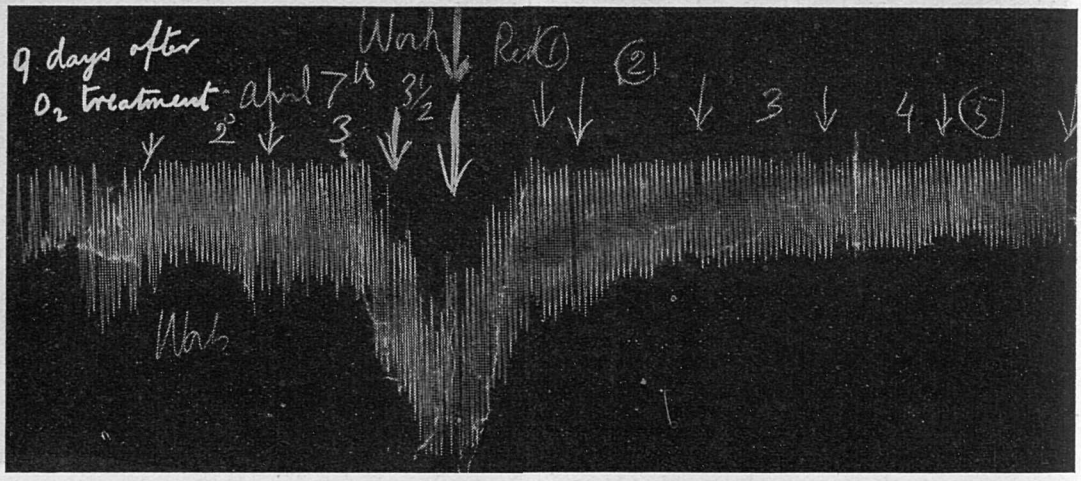


Fig. 5

That it is an easy thing by simple mechanical means to empty the lungs of blood and diminish the size of the heart, or to fill the lungs with blood and increase the size of the heart has been shown by G. P. Crowden. Fig. 6 was taken while trying to expel air from the chest with closed glottis (Valsalva's experiment), the positive pressure has caused a failure of the right ventricle. Fig. 7 was taken while the same subject tried to make a forced inspiration, also with a closed glottis (Müller's experiment); the negative pressure has hindered the left ventricle. Pulmonary congestion will lead to pulmonary œdema, so that the latter may be due to relative failure of the left ventricle compared with the right. Now J. Plesch has suggested an

the apparatus, and in subsequent attacks while he was in the ward, he either obtained benefit from the adrenalin or from the apparatus. It is suggested that this apparatus may be of value as a supplementary method of treatment.

Possibly in some asthmatic attacks bronchial spasm is the most important cause; in others pulmonary congestion and œdema are the most important; the apparatus may be used for the latter. In two attacks of "nocturnal breathlessness" some relief was obtained. There were five cases of cardiac asthma; one patient was no better, and in one case there was relief at first, but not so much later on; in three cases the attack was relieved. There were three other

cases, one of them was a man with auricular fibrillation, rheumatic endocarditis, cerebral embolism, right-sided hemiplegia with unconsciousness and Cheyne Stokes breathing. He was certainly kept alive with the apparatus longer than otherwise would have been possible. The pulse improved, while the Cheyne Stokes breathing was less pronounced. A second patient with myocardial disease and a sudden heart attack was relieved on the first occasion, but the apparatus was not successful later on. A third patient with phthisis had a sudden attack of dyspnœa at 5.15 p.m., the apparatus was applied for a quarter of an hour, and she obtained definite relief, but died the next morning. It would seem that this method may have quite a wide application in the future, and is not merely useful for cases which would be diagnosed as pure pulmonary œdema and which are, on the whole, not very commonly seen. It is limited to those cases where the right ventricle is much healthier than the left; when both are weak, though the left is failing a bit more, it clearly cannot be of very much use.

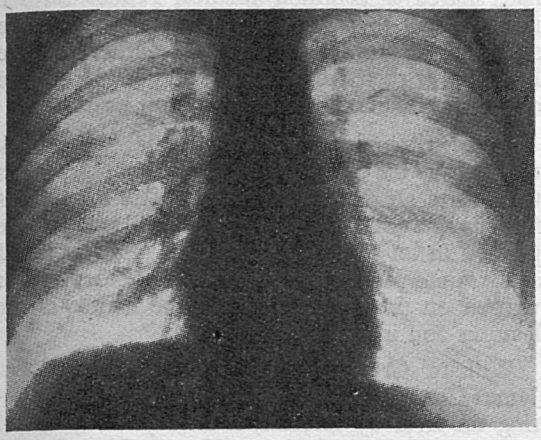


Fig. 6—Chest at end of Normal Inspiration (Valsalva's Experiment). Breath held, and extreme effort made to force expiration against obstruction. Pulse could not be detected at wrist, but, when screened, the heart was seen to be making slight movements. Positive intrapleural pressure = 75 mm.

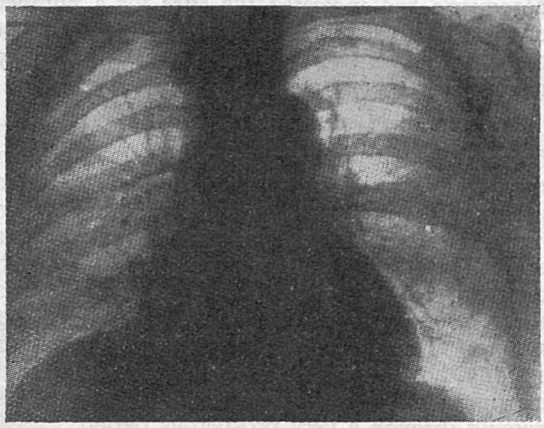


Fig. 7—Chest at end of Normal Inspiration. Breath held, and extreme effort made to inspire against obstruction.

Some Aspects of Medical Practice in Van Diemen's Land, 1825—39

An Address delivered to the Tasmanian Medical Association by W. E. L. H. Crowther, Esq., D.S.O., V.D., M.B., B.S., President of the Tasmanian Branch of the British Medical Association

They journey, manhood, youth and age,
The matrons and the maidens,
Like pilgrims on a pilgrimage,
With burdens heavy laden.—*Gordon.*

GENTLEMEN,—The choice of a subject is never easy, and I fear that before I have finished you will feel that I have dealt altogether too much with a member of my own family. My explanation is that in reading early files of our newspapers I have copied references to him as being of particular interest to myself, and only after long reflection did it seem that these incidents would give others an idea of medical ethics and practice in the early days of Hobart Town.

During November died Dr. Eric Jeffrey, only a few weeks after his masterly Jackson Memorial Lecture had been given in Brisbane. I have missed his wise advice greatly in preparing this address.

At the commencement of 1825 the small community of Van Diemen's Land was still under the strong and wise hand of Colonel Sorell, who, as Lieutenant-Governor, had done much in sup-

pressing the widespread unrest due to bushranging and attacks by aborigines.

The inhabitants of the island, free and bond, were centred at Hobart Town and Launceston, connected even then by a good road. Colonel Macquarie had indicated the sites for a number of inland towns, but it would be safe to say that their occupants were at this time principally military parties and gangs at work on the roads.

Yet a stream of free settlers had been coming in for some years, and land had been allotted to them through the midlands, the east coast and the fertile valleys of the Clyde, Derwent and Esk. The number of the inhabitants of the island at this time (December 31st, 1824) was 12,643, of which total only 2,949 were females, and of this number a large proportion would be part of the government system. The influx of free settlers had set in steadily, however, and the colony, with the rapid expansion of its valuable whaling industry, was passing through a very prosperous period.

The medical care of the community was divided between the Government Medical Department and a very limited number of private medical practitioners. The former consisted of ten medical men, three of whom, with a dispenser and a clerk, were at Hobart Town. Bent's Almanack for January, 1825, mentions only two private practitioners, one of whom is described as an apothecary and a second as a man-midwife. Mrs. Barrett and Mrs. McTavish are also named as midwives. The Government Medical Department staffed and controlled the Colonial Hospital, other medical men being excluded therefrom, except for surgeons of the naval and military forces.

On January 28th, 1825, the ship *Cumberland* (Captain Carns) arrived in the Derwent after a long and unhappy voyage, in the course of which she had had to refit at Rio de Janeiro. Among her fifty-two passengers were Mr. Alfred Stephen, Major Lord and, as surgeon, William Crowther, M.R.C.S., my great-grandfather. Bitter quarrels had taken place between William Crowther and an influential passenger who was proceeding to Van Diemen's Land to take up a post in the government service. Another argument between himself and Captain Carns had terminated only after blows had been exchanged. As a sequel, he was defendant in one and plaintiff in a second civil action before the Supreme Court at Hobart Town within a few weeks of landing.

William Crowther, the fourth son and one of fourteen children of Phillip Wyatt Crowther, a lawyer, holding at the Guildhall the position of Comptroller to the City of London, had been born in 1788 at Stockport, Cheshire, and had taken the M.R.C.S. and L.R.C.P. diplomas from Guy's and St. Thomas's Hospitals on February 5th, 1819.

Until 1826 Guy's and St. Thomas's Hospitals had shared a common medical school for the teaching of their students, and, although the students acknowledged one or other of the hospitals as their Alma Mater, they made free use of the more famous teachers in both hospitals.

It is written in Crowther's medical note-book that he was the pupil of two physicians, Dr. James Curry and Dr. E. Chomondley. The former was famous as a teacher, and his medical lectures were printed in an octavo volume well interleaved. I shall quote later from clinical and other matter written on these pages during the course of the lectures and in after years.

William Crowther has written there of Dr. James Curry (who was a firm believer in stimulating the liver by calomel, *et cetera*): "by one of our wags he was termed the 'Hepatic Leviathan'." This wag may well have been that immortal, John Keats, a fellow student, who himself wrote in his note-book: "The other day during a lecture there came a sunbeam into the room and with it a whole troupe of creatures floating in the ray, and I was off with them to Oberon and Fairyland."

Sir Astley Cooper and Benjamin Travers were the outstanding names among the eight surgeons who signed his surgical certificate.

Obstetrics was evidently a matter of private arrangement, and a statement (in Latin) by Dr. David Davis records that Crowther had attended a course of instruction for four months in that subject. Anatomy and physiology again were subjects taught privately, in Crowther's case by Joshua Brooker at the Theatre of Anatomy, Blenheim Street. These were the days of the "sack-em-up" men, and cadavers evidently were not available for dissection and demonstrations at the great hospitals.

In addition to his work at Guy's, Crowther was probably apprenticed to Dr. John Cozens and practised with him at Islington, then and for some four years afterwards. He, Crowther, was physically a very tall man, being nearly six feet six inches in height. He was a heavy drinker (as were most of his *confrères*) and evidently impulsive and easily moved to anger.

His motives for emigrating to Van Diemen's Land are uncertain. Married to Sarah Pearson, of Macclesfield, he had a son and a daughter, born in 1817 and 1819 respectively. It is probable that the severe depression of the post-Napoleonic

period was a deciding factor in the decision to go to the Antipodes.

The journal and diaries of the long six months' voyage have been lost, probably destroyed when a heavy sea shipped off the south-west coast of Van Diemen's Land caused much damage to his books and papers. Only a family tradition remains of his two children playing on deck and drawing attention to a large number of sea birds in the vicinity, and the *Cumberland* being saved with difficulty from a reef or lee shore.

The first few weeks after his arrival must have been very busy ones. In addition to settling his family (the children were carried ashore from the ship's boat in a little cove adjacent to where the museum now stands), who stayed at first at the Macquarie Hotel, he was occupied with his first law suit and with an application for a grant of land and a town allotment.

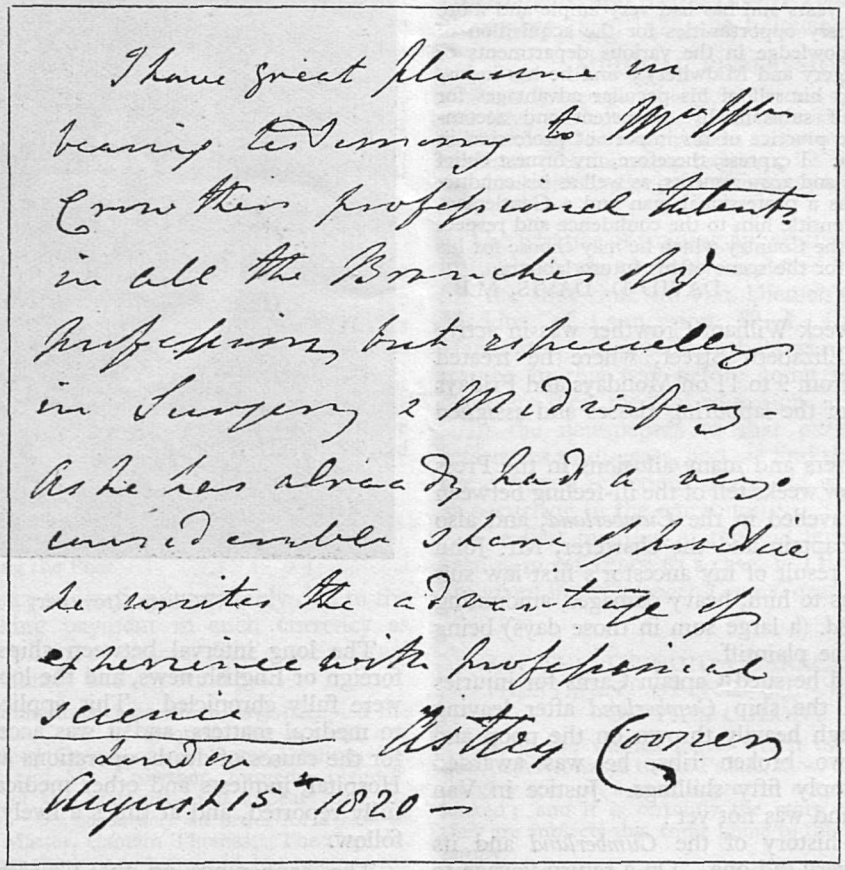
Following the custom of the period, the following announcement appeared in Bent's *Hobart Town Gazette* for February 1st, 1825 :—

To His Honour the Lieutenant-Governor, Public Functionaries, Resident Families, of Hobart Town, and settlers of the Country Adjacent.

Mr. Crowther, Surgeon, etc., Member of the Royal College of Surgeons, London, Fellow of the London Medical Society, and Vaccinator of the National Vaccine Establishment, being impressed with the necessity of following the adopted custom of the Colony, respectfully solicits it may be accepted as an Apology for his offering Testimonials of his Medica Jand Surgical talents, which he has had the honour to receive from Sir Astley Cooper, Bart., Surgeon to the King, and Dr. David D. Davis, Physician Accoucheur to the Duchess of Kent.

Fully prepared for entering on the Duties of his Profession, he will not fail in exerting his skill, humanity and attention to those cases under his Medical Treatment; and presents the following Prospectus of his Surgical and Medical Practice :—

Operative Surgeon and Oculist, Vaccination, Bleeding, Cupping, etc. Midwifery on Terms suited to the Patient's situation in Life—the terms include all necessary Medicines.


I have great pleasure in
bearing testimony to Mr. Wm
Crowthers professional talents
in all the Branches of
profession, but especially
in Surgery & Midwifery.
As he has already had a very
considerable share of practice
he possesses the advantage of
experience with professional
science
London Astley Cooper
August 15th 1820.

Medicine prepared for the Public, to be paid for on delivery.

Attendance given to the most reasonable distance.

Fee on Attendance, which includes Medicine, no extra charge, or Bills Delivered.

Medicines and Preparations from Apothecaries' Hall, London.

N.B.—Mr. Crowther's Diplomas and Testimonials are left for Public Inspection at the *Gazette* Office.

House and Surgery, Elizabeth Street.

Hobart Town. February 1st, 1825.

The testimonials were as follows :—

I have great pleasure in bearing testimony to Mr. Wm. Crowther's professional talents in all the Branches of the profession, but especially in Surgery and Midwifery—as he has already had a very considerable share of practice he unites the advantage of experience with professional science.

ASTLEY COOPER.

London,
August 15th, 1820.

A facsimile of Astley Cooper's testimonials is reproduced herewith.

29, George Street,
Hanover Square,
August 20th, 1820.

I hereby certify that Mr. William Crowther, formerly my pupil in Midwifery, had been favourably known to me for several years and has had very ample and more than the ordinary opportunities for the acquisition of professional knowledge in the various departments of Medicine, Surgery and Midwifery; and he has industriously availed himself of his peculiar advantages for making himself substantially competent and accomplished for the practice of his important profession in all its branches. I express, therefore, my firmest belief that his talents and acquirements, as well as his conduct and manners as a professional man and a Gentleman, are such as to entitle him to the confidence and respect of any part of the Country which he may choose for his residence and for the scene of his future labours.

DAVID D. DAVIS, M.B.

Within a week William Crowther was in active practice in Elizabeth Street, where he treated gratuitously from 9 to 11 on Mondays and Fridays the families of the labouring classes and assigned servants.

Several letters and many allusions in the Press of the next few weeks tell of the ill-feeling between those who travelled in the *Cumberland*, and also between its captain and the charterer, Mr. John Raine. The result of my ancestor's first law suit was disastrous to him, heavy damages, amounting to £181 2*s*. 8*d*. (a large sum in those days) being awarded to the plaintiff.

In a second he sued Captain Carns for injuries sustained on the ship *Cumberland* after leaving Rio. Although heavily thrown on the poop and sustaining two broken ribs, he was awarded damages of only fifty shillings. Justice in Van Diemen's Land was not yet!

The after-history of the *Cumberland* and its captain is a very sad one. On a return voyage to England she was posted missing. In 1829 a pirate ship was captured and taken to Gibraltar, where a ship's bucket was noticed with the name *Cumberland* painted over. Confession of one of the pirates established the fact that the ship had been plundered and then sunk, her crew and passengers having been killed or having had to walk the plank.

It would be well to consider here the activities of the Press at this period at Hobart Town. There existed a great division in the community between Government officials, the military, and those attached to the government system and the rest of the free population. The government Press was very powerful and resisted the efforts of the opposition newspapers to obtain such measures as trial by jury, freedom of the Press, *et cetera*. In consequence, politics caused much bitterness, and the strongest personalities were exchanged at the smallest provocation.

William Crowther

The long interval between ships meant little foreign or English news, and the local happenings were fully chronicled. This applied particularly to medical matters, and it was accepted as usual for the causes of death, operations at the Colonial Hospital, inquests and other medical items to be fully reported, and at times a lively discussion to follow.

The happenings on the *Cumberland* and the subsequent law suits were thus for a time given full publicity, and the cause of William Crowther was promptly taken up by Andrew Bent (editor of the *Colonial Times* and anathema to Lieutenant-Governor Arthur). In this way he became decidedly *persona-non-grata* in government circles. This was a constant handicap in his struggle to establish himself as a successful medical man in the community.

After two years' work he was again involved with the law. This time as defendant to Mr. John Raine, and, damages being awarded against him not being properly met, we find the sheriff stepping in with a writ of execution.

On June 9th, 1827, therefore, Mr. Collicott advertises for sale on Wednesday next :—

Mr. Crowther's household furniture, etc., consisting of dining, card and work-tables, beds, bedsteads and mattresses, china and glass ware, an excellent barrelled harp by Longman, a double-barrelled gun gold mounted by Nock with case complete, also a grey horse, saddle and bridle and a quantity of hay.

Later numbers do not state whether this sale took place or not.

In the same number of the *Hobart Town Gazette* is this glimpse of the other side of the question :—

Having during the last two years and a half given a generous unlimited credit, and aware of the danger of continuing the same, I beg respectfully to state that I am obliged to discontinue such a mode from this date, and I hope all accounts for Medical and Surgical attendance will be paid forthwith.

Signed. WILLIAM CROWTHER.

It is difficult to ascertain conditions of practice at this time, but these extracts will throw some light on the fees expected. In the *Colonial Times* for December 15th, 1926, the following appears :—

Mr. Crowther, surgeon, having been informed that an erroneous report is in extensive circulation as regards his charges in Midwifery practice, is induced to give publicity to the terms to which he has invariably adhered since his arrival in this colony.

In attending the First Class	£5	5	0	Sterling
In attending the Second Class	£3	3	0	
In attending the Third Class	£2	2	0	
In attending the Poor	£1	1	0	

The reference to sterling is probably due to the habit of making payment in such currency as dollars, rum, wheat, *et cetera*. The same journal a month previously had reported :—

Among the numerous cases which have occupied the attention of the Court of Requests we noticed one wherein the Head Groom of the Horse Dealings Co. was defendant and Mr. Crowther, Surgeon, plaintiff. In the course of the examination it appears that the Defendant gave *very honourably* an order for a sum of money on his Master, Captain Thomas. The Captain, however, did not think fit to honour it, but retained the same in his possession, "thus pocketing the affront" with a vengeance, and which probably led to the fracas which we lately noticed in our paper. We subjoin a copy of the enormous Professional bill :—

To attending and setting James Arnold's rib, bleeding bandaging, etc. ..	£2	2	0
To regular attendance, one month ..	£1	1	0
	£3	3	0

Verdick for the Plaintiff.

The encounter referred to was described as follows in the *Colonial Times* of October 20th, 1826 :—

FRACAS IN HIGH LIFE

Last week a recontre "a-la-Cribbe" took place between Dr. C—— and B. B. T——, Esq., in the Public Street, opposite the "Ship Inn," in which, although his antagonist displayed great science, the Doctor came off victorious, owing to his superior "length." We are given to understand that the "length" of the "long" Doctor's "long" bill for "long" medical attendance was the cause of the quarrel.

The practice seems to have been increasing, and in March, 1826, the surgery had been moved to the house in Murray Street lately in the occupation of Mr. Glover, near the residence of the late Dr. Margett, and in the *Hobart Town Gazette* for November 18th, 1826, the following appears :—

MEDICAL PROFESSION

Wanted, a respectable youth as an apprentice. He will have the advantage of an extensive practice and will be treated in every respect as one of the family. A moderate premium only required, his assistance being the chief object. For particulars apply to Mr. Crowther, Surgeon.

The practice of training apprentices, well known in England, was probably employed in this instance for the first time in Van Diemen's Land. Dr. Maddox, of Launceston, W. L. Crowther, Mr. Harrington and possibly others were in succession trained in this way before going to England to complete their medical education.

In the newspapers of that period are many references to diseases, and we find that one by one the common infections of the old world are noted as occurring in the community.

The first mention of typhoid fever that I have seen is in reference to a case, full details of which are given in the *Hobart Town Gazette* of June 9th, 1826 :—

ON THE TYPHOID CHARACTER AND TREATMENT OF THE BILIOUS FEVER OF THIS COLONY

Among the various topics which the Medium of a newspaper conveys to the Public, those of Medicine and Surgery seem in a great degree, if not altogether, overlooked ; and it is certainly the more surprising since they are subjects that come home to the bosom of every family.

In a colony of so recent a formation as this it can scarcely be supposed that the Faculty should have succeeded in the formation of a Society in which cases either very critical or of very rare occurrence could be introduced and discoursed upon, and whence the practitioner might be enabled to adduce inferences to guide him in his future Practice.

This is the benefit of the Society established in London, termed the London Medical Society (of which I have the honour to be a Fellow), formed and supported by a benevolent grant, and an extensive Library, bequested by the late highly esteemed Dr. Lettsom.

In introducing this subject to the notice of the Public, I trust I shall be excused from any charge of Egotism. I disclaim any motive but that of acting conscientiously in the varied duties of my profession; and if the case with the successful treatment the particulars of which I here submit, should save from an early tomb any one individual, my object will be fully achieved.

It is well known to the Medical Profession of this Colony that we have Bilious Fevers of a Typhoid character, not contagious nor epidemic, in which, with the derangement of the Hepatic Functions, the Brain and Nerves are principally affected, and whence Coma and Delirium close the fatal scene; previous to which the secretions vary from a black Bilious discharge to those of a copper colour—the Pulse constantly irregular and generally below the normal standard.

The cases I have witnessed, and which proved fatal, determined me to pursue another mode of treatment, not formed on any theoretical opinion of my own, but that adduced from the practice of the late eminent Dr. Rush, of Philadelphia, who, after rejecting the inefficacy of bleeding and purging in Bilious Fevers, suspected that death ensued from Stagnation of acrid bile in the Gall Bladder or its adherence to the upper bowels, and which he proposed to evacuate by strong emetics and purgatives, and that the system should be first reduced by bleeding.

The time for exhibiting the emetics should be regulated by the Pulse and other symptoms, and, however low, the greater the necessity previous to the discharge of the bile. The cure of the fever should not rest upon a single dose—two doses have been given in a single day, and in one case which he describes, every day for three successive days.

The following is a late illustration of this practice :—

May 30th, 1826.—I was called upon early in the morning to call upon a female servant of Mr. Ibbott, of the Old Beach; she had been ill ten days, the attack commencing with violent purging and pains in the bowels, which she attributed to getting wet from the severity of the weather and remaining in her damp clothes for several hours. I learned from the attendant that the purging had ceased on the sixth day after the attack, but the pain continued undiminished, particularly in the right side, until she was obliged to have medical assistance.

On my arrival she was delirious, grinding her teeth and the jaws fixed, her pulse irritable and weak, with cold shivering without intermission.

I instantly bled her from a large orifice, subtracting quickly a pint and a half of blood. This produced a relaxation of the muscles and improved the symptoms, and an attempt to vomit ensued without effect, but gave me the opportunity to administer a strong emetic—the effect of which was a copious discharge of frothy secretions from the stomach and intestines. At night she had twelve grains of Calomel and an aperient mixture.

In the morning of the 31st she was considerably better, but complained of a want of sleep. She had no pain in the back or head, the tongue was white, dry and encrusted, and the pulse very feeble. In the course of the day she took two purgative powders, each two scruples of the Compound Jalap Powder, which produced copious black Biliary secretions; and at night she had a warm febrifuse mixture. In the morning of the 1st June I was called up at four o'clock and, on visiting my patient, I found her again delirious. She had during the night complained of great pain recurring in the right side, extending over the abdomen; the pulse low, the brain hot, and the tongue dry and white.

I bled her again from the vein until Syncope ensued, after which I gave her half-scruple doses of Calomel every four hours and a wine-glass of Compound Jalap Mixture with Epsom Salts every two hours. With the application of a very large blister over the seat of the pain at night the patient felt relieved.

June 2nd.—At 10 o'clock in the morning I visited her. She complained of want of sleep. I repeated the Calomel. At 1 o'clock of the forenoon I was sent for. The delirium had returned, the pulse low and rapidly sinking, the brain excessively hot, with faint shiverings and great difficulty of breathing. Up to this period no change had taken place in the nature of the bilious secretions.

I opened the Temporal Artery and relieved the head of a full pint of blood (arterial) and immediately afterwards exhibited another strong emetic—high bilious, frothy secretions from the stomach and intestines. The symptoms during the night improved and for the first night the patient had tranquil and refreshing sleep.

June 3rd.—The patient better, the gums affected by the Calomel, and considerable saliva. Repeated a half-scruple of Calomel in the morning and the purgative powder in the evening. This produced a favourable change in the Biliary secretions.

June 4th.—The patient continued improving. Exhibited the same medicine as the previous day.

June 5th.—Repeated the medicine and changed the diet from barley water and gruel to chicken broth.

The patient is now fast recovering her health, and I am persuaded I owe the success of the case to the use of the emetics which, by specifically acting on the stomach, pylorus and duodenum, discharging the acrid and pent-up bile from the Gall Bladder through the Cystic Ducts, and, having thus removed the cause, the fever ceased.

WILLIAM CROWTHER,
Surgeon.

June 6th, 1826.
Murray Street,
Hobart Town.

Two other reports culled from William Crowther's medical notes give an idea of the methods of treatment in vogue at this period. Two patients, one with erysipelas and the other with ascites, are noted as under :—

Erysipelas. Case of Mrs. Lloyd, of Hobart Town, August 1st, 1828.—The face, neck and head suffused and coma approaching, ordered viz.—Ounces 2 Mist. Antimona Tartaratum, grains xii in mixture, of which a teaspoon she took every 3-4 hours.

This considerably diminished the inflammation, by copious evacuations by the stomach and intestines.

August 2nd.—The symptoms again unfavourable, increasing Pyrexia extending over the left ear and considerable delirium.

V.S. (venesection) AD pints (or lbs.) 2 in two basins. The first hazy and no serum, with a light pea-green hue on the surface of the crasamentum; the second basin the crasamentum and serum equally proportionate. At night two pill calomel, grains 12. In the morning considerably better; copious Biliary evacuations continued. The cuticle of the face and ear desquamating and in a few days the patient recovered.

N.B.—In this case, by the exhibition of only 12 grains of Calomel after the copious diaphoresis of the Tartar Emetic, a salivation was produced, which continued for several days, and no doubt much help was due to it in the rapid recovery of the case.

Ascites. Mrs. Anson. Age not given.—After the exhibition of Cathartics and large doses of opium at

night (to the extent of six or seven solid grains, and from 60 to 90 drops of the Tincture), which totally reduced the swelling of the lower extremities and produced good fluidity of the abdomen, I was induced by the solicitations of her friends to tap her, which I did on Sunday night, the 29th October, 1828.

The quantity of the liquid was two gallons and a pint; the colour clear with rather a yellowish tinge; odourless, and in taste a little saltish.

After the operation I gave her 90 drops of the opium.

Hobart Town in the late twenties and early thirties went through one of its many periods of trading expansions and depression, and the need for some arrangements corresponding to our contract practice became manifest. To meet this, a public dispensary became a necessity, and one was established towards the end of 1831.

HOBART TOWN PUBLIC DISPENSARY

"Knock and it shall be opened unto you."

Patients attended at the Institution since 1st April ..	60
Patients attended at their homes	21
	81
Total number relieved since the opening, 1st January	259

In 1834 the institution was still in full working order, but of Mr. Robinson, surgeon, who was associated with its working, we hear no more.

To pass for a while from town to country, we find that Lieutenant-Governor Arthur had granted to William Crowther 800 acres in that area of the valley of the Clyde now known as Hollow Tree. This had been surveyed by Mr. Sharland, and he had entered into possession. In 1827, thinking to increase his estate, he had paid 10 per cent. of the purchase price of another 500 contiguous acres. The following correspondence in the archives of the Land and Survey Offices gives a clue as to the reasons for his taking this step :—

Hobart Town,
February 10th, 1827.

Your Excellency,

I beg to inform your Excellency that in the year 1825 I imported the wild grey rabbit into the Colony, from which a considerable stock has increased, so I in consequence solicit an extension of grant to enable me to form a warren. In the event of your Excellency meeting my wishes, I beg leave to point out the land adjacent to that originally granted to me.

With every possible respect,
I have the honour to be
WILLIAM CROWTHER.

On this letter the Surveyor-General marked the following memorandum :—

I believe there have been refusals to applications for additional land supported by stronger claims than wild rabbits.

The Governor's memorandum, placed below that of the Surveyor-General, was :—

That pending the survey no additional land can be granted, and that I am not prepared unconditionally to approve of grants of land for rabbit warrens.

As with so many other pioneer settlers, the survey work was not completed, and later, in spite of a petition from his widow to Sir John Franklin, the land was allotted to a late-comer.

When William Crowther was travelling from his country residence or returning from a visit to a country patient, the following extraordinary incident happened at the King's Head Inn at New Norfolk. The account of an inquest from the *Colonial Times* of April 14th, 1826, reads as follows :—

To the Public. On the 4th April, 1826, Dr. Crowther came to my house at about half-past eight o'clock at night. I was sitting there with Mr. Newby when a knock came to the parlour door. I charged my servant, John Stanning, not to let anybody in until he knew who they were; I told him to put the chain across the door, which he did, and then opened the door to the length of the chain and asked who was there. The voice outside said: "Mr. Crowther." I immediately gave orders to let him in. Dr. Crowther, as soon as he came in, took me by the hand and said: "Mr. Abel, I am glad to see you so guarded against bushrangers." He then called for supper, and all he had to drink with his supper was one glass of beer. He said he had rode a number of miles that day and said he was rather chilly and requested to withdraw into another room, where there was a fire. I accompanied him. As soon as we entered the room, Mr. Crowther, being a strange gentleman to Mr. Manby, Mr. Manby said: "Mr. Abel, I will retire." I then took a candle and showed him to his bed and returned to Mr. Crowther. The family were all in bed, also my servants, except John Stanning, the waiter. Mr. Crowther said: "Mr. Abel, I think we can take half a pint of brandy before we retire." We sat talking until nearly a quarter past ten, when a knock came to the dark passage door. I never rose from my seat until my servant, John Stanning, called out: "Here they are." Mr. Crowther rose from his seat immediately and entered into the passage. I rose at the same time and went into the parlour, took up my fowling piece and went to the assistance of Dr. Crowther. When I came to the parlour door, being the length of a room from the passage, I saw Dr. Crowther laying on the floor, as I thought a corpse. I immediately, with my piece upon a charge, drawing around the end of the table. I knew I had left nobody in the room but Dr. Crowther and John Stanning, who were both dressed in dark clothes. I saw the shadow of a man in white in the dark part of the passage. I immediately fired, threw down my piece and went for my second. Mrs. Abel being in bed, I had to go into the bedroom for it, and on my return, cocking my pistol as I came, I was surprised by my son George just as I was in the act of firing at a man outside dressed in white by saying: "Oh, Father, you have shot my brother Henry." I then proceeded to the passage. I could not believe that it was my son, thinking he was in bed. I found out my mistake, found it to be my son, and found him to be dead. I asked John Stanning which way he made his entrance, as I saw the bar upon the door, and he said: "Through the opening for the fanlight," I said: "Oh, you scoundrel, you knew him to be my son." He said he did not. I asked him also the next day if

he ever knew my son to come through the opening of that fanlight before, and he said, " No."

(*Signed*) WILLIAM ABEL, Snr.

New Norfolk,
April 9th, 1826.

Verdict returned by the coroner's inquest: Excusable homicide.

So through the years, on his grey horse and on foot, he pursued the routine of general practice in this colony. One by one the diseases of the Old World found their way into the community. The first mention of measles, for instance, indicates that doubt had been cast on the correctness of his diagnosis, and evoked this reply in the *Hobart Town Courier* of January 23rd, 1835 :—

Sir,—In consequence of the doubt which a paragraph in the last number of the *Tasmanian Review*, relative to the prevailing eruptive disease, seems to imply, I consider it necessary to inform you that I have invited Dr. Bedford and other members of the Faculty to visit the cases of measles now under my medical treatment, and they unanimously concur with the diagnosis I have formed of the disease. It would appear that from the connection of families all those through which the contagion has spread have come under my care, and therefore the author of the information in *The Tasmanian* has not perhaps had the opportunity of witnessing them. At the same time I have the satisfaction of reporting that such is the mild character of the cases hitherto that, though considerably increased in number since yesterday, they are not calculated to excite alarm.

WILLIAM CROWTHER,
Surgeon.

This epidemic, however, as in the case of an outbreak of pertussis, did not continue in so mild a course, and there was considerable mortality before it subsided.

The two children growing up were placed, Elizabeth at Mrs. Clarke's famous school, " Ellenthorp Hall," near Ross, and William at Mr. Claiborn's Academy at Longford. Their father, in an advertisement, states that on his ride from one end of the island to the other, taking them to their respective schools, intending patients may consult him *en route*.

The following extracts from three newspapers during these years are interesting, showing, as they do, first, that a tendency towards mutual protection and co-operation was arising within the ranks of the medical practitioners of this colony, and, secondly, for the light they throw on the attitudes adopted by the general public, coroners and medical men towards inquests and inquiries into deaths by violence and natural causes.

The following extract is from the *Hobart Town Courier* of Saturday, May 17th, 1828 :—

Sir,—A cessation having apparently taken place of the late medical correspondence, which had assumed a tone and comprehended subjects certainly perfectly foreign to that in which it might be supposed to have originated, perhaps I might be permitted to address a few lines to you solely in reference to the plain fact, which alone interests me, whether or not as a medical man my practice has been judicious in a certain recent instance.

In order to do this, I consider the shortest method of vindicating myself will be to make the following extract from a document with which I have been furnished by six medical men, certainly with much professional respectability, after the minutest investigation of the case. The parts omitted are, as to the particulars of the case, unnecessary to come before the public.

We, the undersigned, have fully and dispassionately examined into the case of midwifery (stated), and in consideration of the peculiar circumstances under which you are placed, we conceive that your prompt and decisive treatment merits our entire approbation and reflects great credit on your professional skill and ability.

We are, Sir, etc.,

J. SCOTT, R.N., Colonial Surgeon.
H. J. BROCK, M.D.(Edin.), Surgeon, R.N
W. SECCOMBE, Colonial Asst. Surgeon.
J. SPENCE, Colonial Asst. Surgeon.
J. GRIFFITHS, Surgeon.

To Mr. Assistant Surgeon Garratt, Sorell.

I have learnt every particular of a recent midwifery case attended by Dr. Garratt, and from a very long course of practice I am enabled to certify that the most judicious and proper treatment was exercised towards the patient with the most happy success, and reflects great credit on the practitioner.

WILLIAM CROWTHER.

Similar expressions of approbation have been conveyed to me in this case from J. Moxy, Esq., M.D., and Surgeon of H.M.S. *Rainbow*.

I am, etc.,

R. GARRATT,
Colonial Asst. Surgeon.

Sorell,
May 8th, 1828.

The following is from the *Hobart Town Courier* :—

Richmond,
September 27th, 1828.

An inquest was this day held on the body of George Walton, who about four weeks since was wounded by the accidental discharge of a gun in the hand of our worthy Police Magistrate, when passing through a wattle bush in pursuit of two men supposed at the time to be bushrangers. The ball, striking and wounding the gentleman's foot, bounded and passed through the man's thigh. Walton was attended by Surgeon Garratt, under whose skilful aid he was fast recovering, being not only able in a few days to sit up, but to walk with the assistance of a man who attended him. In a week or eight days, however, he was attacked by a disease which terminated his existence yesterday morning.

Dr. Murdock, with Surgeons Crowther and Garratt, opened the body, and after a minute inspection were enabled to depose that George Walton did not come by his death from the gunshot wounds, the ball having passed through the thigh without in the smallest degree

injuring any vital part, but that a diseased liver and intestines, altogether with the effects of hard drinking of ardent spirits, was the actual cause of his death.

The jury, after a long and strict investigation and a pertinent charge from the Coroner (James Gordon, Esq.), returned a verdict: Died by the visitation of God.

The following is an extract from the medical report on the case :—

On opening the abdomen, intensive inflammation presented itself, the stomach, with the whole of the intestines, having assumed a livid character, while the liver and spleen had by previous diseases been totally altered in their structure, both breaking down under the pressure of the fingers.

The accident of the gunshot wound did not therefore cause the death of George Walton, no vital parts having been injured and the length of time lapsing from the injury until the commencement of the secondary fever, and which terminated by general erysipelatous inflammation arising from a diseased liver and spleen.

JAMES MURDOCK, M.D.
ROBERT GARRATT, A.C.S.
WM CROWTHER, Surgeon.

September 27th, 1828.

The year 1837 saw my grandfather, hitherto an apprentice, taken into full partnership with his father and the giving up of the dispensary in Liverpool Street. The new place of residence was at the corner of Murray and Collins Streets, where they confined themselves to the general practice of medicine and surgery.

At some future time I hope to speak of the refusal of the government to allow my grandfather and other " native youths " to be admitted as students to the Colonial Hospital; also of William Crowther's long and able address in 1835 to the Legislative Council urging that this restriction be removed and the institution be used as a teaching school for medicine. With his son in partnership and a consequent lessening of the demand on his time he was enabled to enter into new fields of interest.

Widely read and with extensive knowledge of the humanities, he was also interested in natural history and geology. This knowledge was of use to him when he lectured twice on geology and a third time on education during 1837 before the Mechanics' Institution at Hobart Town, the only scientific society here at that date and the forerunner of the Royal Society of Tasmania.

Alas, the geology was simply a study of that of the Old World, with no mention of the wonderful field as yet unworked all around him.

He also took a prominent part in July of the same year in the formation of an Association for the Preservation of Native Game of the Colony. Here, too, it may be mentioned that among his effects at the sale of his estate after his death was a pheasant house. This is the first mention I remember having seen of the importation of these birds into Van Diemen's Land.

My grandfather, leaving Van Diemen's Land by the *Emu* on February 24th, 1837, to enter St. Thomas's Hospital, was fated not to see his father again. Worn out by sixteen years of toil and strife, the latter was a victim of a very serious accident on the road near Pontville when returning from visiting a patient at the Broadmarsh. As the *True Colonist* puts it :—

In consequence of the darkness of the night and the road being carelessly left by the men with large unbroken stones, his horse fell on them with such prodigious force as to pitch upon his head, throwing Dr. Crowther with a violence which caused him considerable injury, from bodily contusions, severe lacerations of the integuments of the face and fracture of the left maxillary bone. Such were the effects of the fall from swelling of the head that it was an entire week before it was possible to set the bone. The practice of placing large stones and logs on parts of the high road in order to compel vehicles to travel over the mended parts is, we think, very unnecessary and is indisputably dangerous. . . .

From this accident he never really recovered, dying some fifteen months later, on Christmas Day, 1839, at his country residence, " Sans Souci," his age being 51 years.

The practice was carried on by Mr. Mill, surgeon, until the return from England of W. L. Crowther in 1841, and since by his descendants. Two of the latter, the Honourable W. L. Crowther, F.R.C.S., and Senator the Honourable J. B. Hayes, C.M.G., have held office as Premier of the island.

It is not for me to attempt to appraise the quality and value of his work for sixteen years in this infant colony. He bore a modest but substantial part in the development here of the medical profession and of its ethics.

To-day, one hundred and ten years after his landing in Van Diemen's Land, I offer this address as my tribute to his memory. Is it too much to say that the great prestige that has been given in the past and is still accorded to the medical profession in Tasmania, is due largely to the tradition of service and integrity handed down by such pioneers ?

His tombstone in old St. David's Cemetery bears this epitaph : " Not ignorant of evil himself, he learned to pity the wretched."

Guy's Hospital Gazette
(ESTABLISHED 1872)

The Editor will, at all times, be glad to consider articles or sketches, provided that they are accompanied by the writer's name and address, not necessarily for publication. Authors who desire reprints of their papers should make their own arrangements with the Printers when they return their proofs. All contributions to be addressed to *The Editor*, who does not accept responsibility for the views expressed by contributors.

Guy's Hospital Free Lending Library

(THE GUILD OF HOSPITAL LIBRARIANS)

By Mrs. A. Richmond, Hon. Librarian

IT is now more than two years ago since the readers of *Guy's Hospital Gazette* have had news of the progress of the work of the Patients' Free Lending Library, which since May has entered upon its fifth year of service. To give an idea of the extent to which the books are used it is easiest to quote the figures published in the Annual Report to the Governors of Guy's Hospital for 1934 :—

	No. of books lent
In Non-Paying Wards	22,658
In Paying Wards (Bright)	308
To Staff	3,985

The weekly distribution of books has continued without interruption, and the enthusiasm of its voluntary helpers shows no signs of weakening. This being the case after more than four years' uninterrupted working, it may be of interest to give an idea of the reasons why this form of work is so successful.

Although the new assistant librarian is not allowed to start work on her own till she has been trained for several weeks, she will find that, however long she has been doing the work, she never ceases to learn. As time goes on the assistant gets to know her ward. Patients may come and go, but each ward has its own atmosphere. It is left to her to fit in with that atmosphere. It is true that she only comes once a week, but her regular attendance in that same ward on the same day ensures continuity, which is extremely valuable. Where the librarian is successful it means that she will feel at her ease, and those patients who have been in the ward for some time know her and trust her and will pass on to newcomers the feeling of goodwill which is essential to the success of the work. The staff also expect her visit on a fixed day, and closer co-operation follows as a matter of course if there is no interruption or change.

It must be emphasised here how particularly fortunate the librarians at Guy's Hospital are to be allowed to do their round in the morning. Where they do their best not to interfere in any way with the work of the staff, they feel that they take their place quite naturally in the ward and are part of the routine work carried out in the morning. They are not looked upon as a luxury or an additional comfort for the patients—they are definitely part of the organisation of the hospital, and have the satisfaction to know that their work is a contribution, however small it may be, towards the improvement of the health of the patients.

At the same time they preserve their individuality; dressed in bright colours—not in a uniform—pushing a trolley with books of all sizes, shapes and hues, they give an impression of health and vitality, which must be stimulating to the patient and help to turn his thoughts away from his sufferings and of those surrounding him. Their work is essentially one which calls for imagination and an alert mind. Their approach to each patient can never be the same—a quick glance, a word or two, and they should know how to deal with him. It is work which never palls, because conditions are never the same.

It can be said of all good voluntary work that, as it grows and develops, interest becomes awakened in the work of others similarly engaged. The workers at Guy's soon felt an interest in the work of other hospitals, and, in their turn, were ready to show how the library service was run at their hospital. This united desire to learn from one another coming from many other hospital librarians found expression at the annual meeting in 1932 of the British Red Cross Hospital Library, when it was decided by a large audience to proceed with the formation of a body to unite all librarians in hospitals and kindred institutions. This was the beginning of the Guild of Hospital librarians, which has been at work since March, 1934. Its objects are :—

1. To unite all persons engaged or interested in library work in hospitals or kindred institutions by means of meetings and correspondence for the discussion of questions and matters affecting such libraries.

2. To promote the establishment of libraries in hospitals and kindred institutions and to further their better organisation and administration.

3. To promote whatever may tend to the improvement of the qualifications of their librarians.

4. To collect, collate and publish information of service or interest to the members of the Guild, or for the promotion of its objects.

The Guild was fortunate in securing the services in a voluntary capacity of the energetic Organising Secretary of the British Red Cross Library, Mrs. Roberts, and soon set to work to build up a programme.

What has been achieved so far will be found in the organ of the Guild of Hospital Librarians called *The Book Trolley*, issued quarterly, copies of which can be obtained (price 2*d*. each) at 48, Queen's Gardens, W.2. It is, of course, highly ambitious to start off with the publication of a periodical, but the Executive Committee is very keen to make the Guild useful not only to London members, but also especially to those who run hospital libraries outside the reach of London, and it was decided straightaway to secure the interest of hospital librarians not only nationally but internationally. It is therefore gratifying that with Lord Balniel as President, the Guild has as members of the Council such distinguished persons as Dr. Alter, of the Executive Committee of the International Hospital Association, Dr. Sevensma, Librarian of the League of Nations, Sir Hagberg Wright, the distinguished librarian of the London library, and others. At the annual meeting in May, 1935, the Guild appointed the following Executive Committee :—

Mr. C. E. A. Bedwell, House Governor of King's College; Mr. A. D. Power, Hon. Treasurer, Mr. Lamb, City Librarian, Central Library, Sheffield; Mr. Farr, Librarian, Central Library, Cardiff; Mr. E. W. Blackler, Hon. Librarian, Hill End Mental Hospital; and the voluntary Head Librarians of the following London Hospitals: St. Bartholomew's, Guy's, Lewisham L.C.C., Maudsley, Middlesex, St. Stephen's.

It is not possible to give an idea of the work done by the Guild or of its programme for the year; this will be found in detail in No. 1 and No. 2 of *The Book Trolley*. That it has started so successfully is a sign that the hospital librarian is not only keen on her work, but interested in what other hospital librarians at home and abroad are doing, and that she realises the value of co-operation with trained librarians.

Reviews

A Text-book of Gynæcological Surgery. By Sir COMYNS BERKELEY, M.A., M.C., M.D.(Cantab.), F.R.C.P.(Lond.), F.R.C.S.(Eng.), F.C.O.G., and VICTOR BONNEY, M.S., M.D., F.R.C.S.(Eng.), F.R.C.S.A., M.R.C.P.(Lond.). Third Edition. Pp. 863. *Price* 45*s*.

THIS truly remarkable book has already been reviewed, notably in the *Quarterly Journal of Obstetrics and Gynæcology*, by far abler pens than mine.* The whole work, from the introductory chapters to that on "Remote Results of Operations," is admirably put together; throughout the text is lucid to a degree, and every operative point is clearly illustrated by Mr. Bonney's own illustrations, numbering 535 in all. In the preface it is stated that only methods personally used are described, but it is certain that there is no gynæcological procedure which has been omitted.

The manner in which the book is written is exemplified by chapter XVI on "The Radical Abdominal Operation for Carcinoma of the Cervix." After giving the history of the operation, it is reviewed from the pathological standpoint; the primary mortality is assessed, then the late results, also the operability rate. The operation is compared with the extended vaginal operation, and the limits of the former are discussed. Only after this comprehensive approach is the operation itself described, followed by a consideration of its complications. It is interesting to learn how low —6.3 per cent.—is the author's mortality rate in early cases, while in cases with no involvement of lymphatic glands 51 per cent. or more patients were alive after five years.

One is left with, if possible, an enhanced admiration of these two great exponents from a school renowned for its gynæcological surgeons. J.B.B.

* Frank Cook in the "Quarterly Journal of Obstetrics and Gynæcology"

Morality and Reality. By E. GRAHAM HOWE, M.B., B.S.(Lond.), D.P.M. Published by Messrs. Faber & Faber. *Price* 6*s*. net.

THIS book is interesting and not a little stimulating. As might not be guessed from its title, it deals mainly with the wider aspect of morality, especially in its relation to the upbringing of children. Its insistence on the "general rightness" of the child is tempered by a commonsense attitude towards deliberate insubordination.

Dr. Graham Howe points out that many parents and teachers make the mistake of trying to force their own "morality" on the child—for instance, in telling it to be quiet—simply for their own convenience. They should not see the child as they would like it to be and then be disappointed or annoyed because it fails to reach their standard of perfection; rather should they accept the "reality" of the child as it is and travel with it along the slow path of its development.

No very definite help is given on the subject of punishment; most of what is advocated is being carried out by a great number of intelligent parents.

The David and Goliath story is very much to the point, and anyone thinking well of himself

should hasten to read it. The diagrams are helpful and interesting, besides being decorative.

Dr. Graham Howe insists throughout the book that true morality is a perpetually shifting quality, and he concludes emphasising this belief.

C. A. C.

Theory and Practice of Anæsthesia. By H. NOSWORTHY. Published by Messrs. Hutchinson. *Price* 12*s.* 6*d.*

IN the Preface to his book, the Author states that he never yet learnt how to give an anæsthetic from a book! But, nevertheless, beginners in anæsthetics will find certain parts of this work very helpful.

There are chapters on each type of anæsthetic, with details about the dangers and difficulties that are liable to be encountered and hints as to how one should deal with them.

The importance of beginning to learn the art of giving anæsthetics by the use of chloroform and ether is emphasised, and in these chapters the student will find much useful information, including a description of the different stages of anæsthesia and the varying signs that may be expected. In addition, certain basic principles, such as the absolute necessity of maintaining a "clear airway," are stressed.

The accounts of the administration of nitrous oxide and nitrous oxide oxygen would be easier to grasp had the author found space enough to give a rather more detailed description of the various gas machines used.

The chapers on spinal anæsthetics and the different application of the various solutions are rather complicated, and are probably of greater value to the more experienced anæsthetist, although there are some helpful details about the mechanics of the operation in reference to the position of the patient.

The student is warned about the dangers of using the longer-acting barbiturates, while the comparative safety of evipan is emphasised.

The chapters on shock and post-anæsthetic acidosis are very helpful and should be read by all anæsthetists and house surgeons.

Suggestions as to the pre-medications and the use of basal hypnotics will also be found in these pages.

Altogether Dr. Nosworthy has produced a very comprehensive yet compact description of the art of anæsthesia.

Further attractions of the book are its brevity and clear print, and a foreword by Dr. Magill adds distinction to the work.

H. G. N. C.

Cunningham's Manual of Practical Anatomy. Revised by Prof. J. C. BRASH and E. B. JAMIESON. Published by Humphrey Milford, Oxford University Press. Ninth Edition, 1935, 3 Vols. *Price* 12*s.* 6*d.* each.

THE last edition of this well-known manual —the handbook of every student from the first moment he is allotted his part in the Dissecting Room to the time he breathes a sigh of satisfaction—or relief—at getting his last "sign-up"—appeared in 1931. It was the last editorial work of Professor Robinson, who had brought the book forward from the fourth edition in 1910. The new editors express some misgivings at being able to keep up the high standard of their predecessors; it can be stated most emphatically that there are no grounds for these fears.

All alterations appear to be improvements in this already excellent book. Two important points seem to have been realised; firstly, many thousands of readers are students who have never wielded a scalpel before and require to be led gently up the path in the Art of Dissection, and of appreciating what they are doing. Unnecessary descriptive detail, that irritates and confuses the reader, has been eliminated, and useful preliminary explanations have been introduced. Secondly, most readers aim at reaching, eventually, the pleasant stage of having to apply their anatomical knowledge to the living body; to further that end the editors have linked up the descriptions of the various structures and parts of the body, and have altered the emphasis laid on them to gain a more balanced and reasonable understanding. Thus the introduction of negative radiograms, in place of the illustrations of X-ray anatomy, is a great improvement, for the student acquires a foresight into the difficult interpretation of the films seen every day in clinical practice. The plates showing parts of the skeleton at different ages, demonstrating various stages of ossification, are excellent. A commendable stress is thus laid on the skeleton upon which the soft parts are built and of which the dissector is rather apt to lose sight.

The advances of surgery have made it necessary to enlarge on certain descriptive portions; to do this within the limitation of its size and without turning the book into a manual of surgical anatomy has been difficult. The most important and helpful amplifications are articles on the palmar spaces, the sympathetic system, and the lymphatic system. The raising of the description of the female pelvis to the same status as that of the male will be much appreciated by dissectors of the former.

Another great improvement, which is much welcomed, is the change of terminology to one

which all normal English students can understand. No longer should those awkward moments occur when the student finds himself faced by an examiner who does not use the same terminology. The Anglicised form of the Birmingham Revision Nomenclature is much nearer than most forms to that used by the present-day clinician.

It has been impossible to offer any destructive criticism of this work. One piece of a constructive nature springs to mind, however. The remembrance of the aroma of one's "Cunningham's," after two years or more in the "meaters," is still sufficiently verdant to make one suggest that the next edition should be brought forth in grease-proof covers! Nevertheless, in its present form the work is admirably produced, in three volumes, of handy size, which enable the dissections to proceed in convenient sequence; the illustrations and diagrams are excellent and adequate in number; the script appears faultless. The editors have achieved their aim, and the book will be used and appreciated even more than before.

I. G. R.

Correspondence

The League of Nations

To the Editor of the GAZETTE

SIR,—In a recent "Passim" you expressed an opinion that, as an instrument for peace, the League of Nations is a failure. That you were sincere I have no doubt, though there is no more certain bait with which to attract the "ardent writer to the papers" than to speak plain truths about the League of Nations, and pungent criticism was assured you. However, like you, Mr. Editor, I wish those champions of the League, who hastened to scorn your youthful cynicism, would give a more reasoned explanation of their views. For, in spite of terrific indignation, neither Mr. Layton nor Mr. Llewelyn Jones contradicted you upon a single point of fact, or cited any success of the League to justify their implicit faith. Neither offered any concrete proposal, save a suggestion by Mr. Llewelyn Jones that much might be done by refusing to read the newspapers.

Personally, I agree with Mr. Layton that the League is founded on sound principles and it is a pity that its support is not more international, but that you should be condemned for daring to criticise it in "Passim" is, I think, ridiculous. Your remarks were just; the League has failed to prevent war and looks like failing again, not from any fault of policy, but because any collective peace system must fail so long as its members have each a personal axe to grind.

Moreover, if Italy invades Abyssinia unrestrained, either by economic sanctions or by force, a dangerous precedent will be set up, for she is not alone in her desire for colonies. Germany, we are told, sympathises with her growing need for expansion. The race to re-arm has begun again, and how long it will be before we return to the old idea of the balance of power in Europe remains to be seen. Meanwhile the Peace Ballot seems even more futile than it did six months ago.

Yours, etc.,

A. G. W. HILL.

St. Lawrence Cricket Ground,
Canterbury.

September 6th.

To the Editor of the GAZETTE

SIR,—We should like to add our voices to those already aroused in varous capacities by your embarkation in "Passim" for Abyssinia.

It is with reference to your correspondent Wing-Commander Stanley Turner. The first point we would take up is that of the cost of the upkeep of the League, which he seems to consider excessive. It has been estimated to be in the proportion of half a crown to an individual with an income of three thousand pounds per annum—an amount few people would think twice about giving to various charities, or to a man in the street.

The second point is of a more serious nature. Wing-Commander Stanley Turner states: "Until Evolution shall bring about such changes as will abolish the ordinary man's instinct to react in kind when he gets a punch on the jaw, the League of Nations and its ideals are somewhat premature." We consider that the main "ideal" of the League—to secure a world freed from warfare as a means of settling disputes—is no longer a "dream," unrealisable and unwanted, but a *practical necessity* of the utmost importance. The last century has seen the nations of the world thrust together by the immense developments of the means and the reliability of communications; so that we can now debate across the Atlantic, fly to Africa and back in a day, and speak to Japan or South America as across a room. This also means that those volcanically destructive forces of the machinery

of modern warfare are more easily used over wider areas. A modern war is *not* an expression of pugnacity (or a return of such), but a coldly mechanical method of killing off great numbers of human beings. Will the man who, in the next war, presses the button that releases a high-explosive bomb from a wireless-controlled aeroplane have any satisfaction for his "fighting instinct"? Or will the man being slowly burnt up by Lewisite gas have any ability to "react in kind"?

The meaning of the word "war" has changed. It is no longer fighting between man and man. It is no longer an attempt of Nature to keep up the balance of life. It is a uselessly extravagant destruction of human life. *Man* makes modern wars, neither Nature nor God nor "the foreigner." *Man* has the power to prevent and supersede the necessity of using war.

Should the League of Nations fail to achieve its "ideals," it is time that we set about to realise those ideals in other ways, remembering that the sixty odd "nations" of the world have been flung together inseparably by the advancing achievements of scientific discovery and invention.

Yours, etc.,

R. E. Hunt J. W. Lee R. L. Greenfield
A. E. Parrott E. Dunstan L. G. W. Dewey
S. Davidson N. S. Harris P. D. Spooner

Guy's Hospital,
S.E.1.

(We confess ourselves unable to understand our correspondents' opening paragraph; at no time have we expressed either the desire or the intention of visiting Abyssinia. If their real meaning is that we have championed the cause of Abyssinia against either Italy or the League, we would repeat again that we have only stated facts and from them presented the case as it appeared to us.—ED.)

To the Editor of the GAZETTE

SIR,—Mr. Layton has regretted that you should "choose to belittle the League of Nations and to sneer at the recent Peace Ballot." I was sorry that you did not accept his challenge and vindicate your attitude more fully. Will you permit me to give *my* answer to Mr. Layton's impeachment?

Firstly, then, so that I may escape the charge of not meeting this impeachment squarely, let me say forthwith that I consider:—

(*a*) That the League of Nations is a menace to the peace of the world, and should be abolished at the first possible moment.

(*b*) That the Peace Ballot was a piece of fatuous "assininity," which fully deserved the contempt with which it was received in many quarters.

A league of nations can be popular with two classes of countries only:—

(i) With those which have wealth and possessions, and would prefer not to have to maintain large standing armies to defend them. France and England are the only examples in Europe.

(ii) With those small weak countries which can never gain anything by war, and can defend themselves only by supporting some organisation such as the League.

These two classes comprise the "good" countries which are all for ethical considerations. *Status quo* at all costs. Let's keep what we've got.

Outside the League, or inside provisionally for political motives, are the "bad" countries, which are dissatisfied with their lots and want some of the wealth and possessions which other countries possess.

They, too, are strongly for ethical considerations, but in their ethical system justice for downtrodden nations takes the predominant place.

They comprise a very strong phalanx—Germany, Italy, Japan and various hangers-on which hope to profit by war.

Now, frankly, can the League exercise its proper function when three of the seven Great Powers are contemptuous of it, and two, Russia and the U.S.A., do not wish to be embroiled in the League's difficulties?

Everyone knows that the League has always been an instrument of British and French policies, and it must remain so as long as the above classification of countries hold good.

"Well, why not support it still? It may do good and it can do no harm." How many times has one heard this? But it can do and has done incalculable harm.

It has lulled us into a sense of false security.

Before the war there was a balance of power—a temporary political equilibrium.

If England in 1913 had made her intentions sufficiently clear, my belief is that there would have been no war.

To-day no-one knows where we stand, but some are beginning to find out that they can slap us pretty hard without extracting a growl. We have become so blinded by pacifists and Peace Ballots that we cannot see that our very existence is threatened—not in 1950, but in 1935-36. If there was ever a moment when the world looked to England for a strong and definite stand it is now.

To give an analogy we are like a man who, having had a painful operation, has developed a neurosis on the subject. The doctors have told him that another operation may be necessary, but he won't admit the possibility, but spends his time at osteopaths and homœpaths, always hoping, but never facing the facts.

No, let us face the extreme probability of another world war in the near future, and let us make sure of winning it when it comes.

If we act quickly we may even avert it. The immediate necessity is a fleet of 5,000 aeroplanes, a standing army of a million men and a more powerful navy. You don't like the prospects? Neither do I, but what's the alternative? After the next war, what then? How shall we prevent a recurrence?

There is a solution, and I think I know it, but that's another story.

Yours, etc.,
H. B. O. CARDEW.

Heather Cottage,
Headley.

P.S.—The Peace Ballot was a farce because it is based on the fallacy that by multiplying an opinion ten million times you increase the chances of that opinion being right.

A Clerk for Dr. Duffett!

To the Editor of the GAZETTE

SIR,—On reading Dr. Duffett's courteous letter in the *Gazette* of August 31st, suggesting that clerks should be provided for the Residents, while heartily concurring with his suggestion, I feel bound to make the facts of the case public.

I received a letter from Dr. Duffett on August 6th, asking if a bed could be found for an urgent case of supposed ovarian tumour. In order to save delay I myself telephoned the doctor's residence on the morning on which the letter was received. As happens so frequently, the busy practitioner was out, and I left a message with the lady who answered the telephone. The message appeared to be understood, and was to the effect that if Dr. Duffett sent the patient up to the Surgery she would be admitted forthwith. In view of Dr. Duffett's somewhat indignant letter in the *Gazette* I can only suppose that perfection is not invariably attainable, even in the clinical arrangements of Dr. Duffett.

I am doubly sorry at not having had the privilege of admitting the patient in question, as I have no doubt the case would have proved to be both unusual and instructive.

Yours, etc.,
C. G. PANTIN,
House Surgeon.

Guy's Hospital,
S.E.1.

Hospital Information, etc.

Notice

A Dance will be held in the Nurses' Home on Thursday, September 26th, 8.30 to 12 p.m.

Tickets (limited), 3*s*. each, may be obtained from Staff Nurses in Out-Patients, Surgery and Theatres.

Pass List

SOCIETY OF APOTHECARIES IN LONDON
FINAL EXAMINATION.

August, 1935.

Surgery.
*S. E. Osborn.
Medicine.
*H. N. Levitt.
Midwifery.
M. A. Partridge.

* Have now completed the examination.

July, 1935.

Surgery.
*A. Ponder.
Medicine.
N. O. Lucas.
Forensic Medicine.
G. B. Barbour.

* Has now completed the examination.

CONJOINT BOARD.

June, 1935.

CHEMISTRY, PHYSICS AND ELEMENTARY BIOLOGY.

Chemistry.

A. H. Bell
J. C. Bulstrode
S. G. McCallin
B. M. Coffey
A. J. Dossor
J. R. Edgson
M. L. H. Evans
P. Fletcher
A. Forbes
J. H. G. Halliday
R. C. Jones
J. A. Pearmund
I. W. Ross
F. G. Stoddart

Physics.

M. K. Burt
D. A. Clough
A. P. Davies
A. J. Dossor
M. L. H. Evans
P. Fletcher
A. Forbes
J. R. Goldman
J. A. Pearmund
R. D. Plowman
R. C. Jones
I. W. Ross
F. G. Stoddart
H. A. Woodward

Elementary Biology.

B. Alhadeff
C. A. Anderson
H. Brock
D. J. Chapman
C. H. Dunn
P. Fletcher
J. H. Flitcroft
A. Forbes
C. Halamandres
H. B. King
A. Kinghorn
P. D. Kolesar
L. G. Morgan
H. J. Nicholls
W. A. T. Parsons
T. H. S. Smith

ANATOMY, PHYSIOLOGY, PHARMACOLOGY AND MATERIA MEDICA.

Anatomy.

R. H. Bhanji
E. I. Davis
B. Djanogli
J. W. S. Harvey
R. J. Healey
A. B. Lennie
D. R. Levinson
J. Lynch
M. O. Richardson
J. R. E. Richardson
P. S. Silver

Physiology.

J. F. Buckmaster
E. I. Davis
B. Djanogli
R. J. Healey
J. Lynch
A. J. Patenall
M. O. Richardson
J. R. E. Richardson
F. L. D. Young
C. F. Ziervogel

Pharmacology and Materia Medica.

B. Bell
L. B. Blomfield
V. H. Bowles
E. Dunstan
N. R. McEvoy
J. W. Hallam
A. M. Hutton
W. A. Lombard
J. Patterson
D. G. Price
J. H. Rake
M. O. Richardson
T. H. Steele-Perkins
N. G. Straschun
C. R. Tilly

UNIVERSITY OF LONDON.
SECOND EXAMINATION FOR MEDICAL DEGREES.

PART II.

July, 1935.

C. G. Baker
V. H. Beynon
D. A. G. Brown
J. Burton
H. B. O. Cardew
G. B. Collyer
T. T. Davies
I. G. B. Drybrough-Smith
F. E. Falconer
H. Foster
J. B. Franklin
A. C. Greene
W. S. Hacon
E. R. Hodgson-Todd
T. R. Jones
C. L. Kimelberg
O. Meerapfel
H. E. Moody
L. Nancekievill
J. R. E. Richardson
M. O. Richardson
L. F. W. Salmon
A. J. Walker

M.S. EXAMINATION.
July, 1935.
BRANCH I.
Surgery.
T. F. Todd.

ROYAL COLLEGE OF PHYSICIANS.
July, 1935.
M.R.C.P.

M. J. F. McArdle
W. A. Caldwell
H. A. Treble

CONJOINT BOARD.
FINAL EXAMINATION.
July, 1935.

Medicine.

*P. W. Clarkson
*M. J. Harris
*M. J. Lange
*C. A. Lillicrap
J. S. Stuart

Midwifery.

A. B. Baxter
F. A. Bleaden
*A. S. Bookless
J. M. Brown
G. L Burgess
G. D. Channell
T. A. Hale-Munro
H. E. W. Hardenberg
S. Jackson
H. R. Loughran
P. D. Lynch
G. D. N. Milne
J. W. Clegg
W. M. Van Essen
W. W. Gilford
F. E. Pitt-Payne
A. R. F. Thompson
G. N. Wright

Pathology.

O. B. Alakija
J. M. Brown
E. Gill-Carey
G. D. Channell
H. R. W. Franklin
W. W. Gilford
E. Gillett
H. E. W. Hardenberg
R. K. R. Henry
A. G. W. Hill
L. W. Kamm
E. Kaplan
H. R. Loughran
L. G. Lyle
D. H. Mackay
G. J. Van der Merwe
G. D. N. Milne
N. O. Paterson
F. E. Pitt-Payne
J. B. Spearman

Surgery.

L. J. Blay
B. J. Doran
W. M. Van Essen
W. Hughes
*N. W. Irish
R. A. Johnson
G. J. Van der Merwe
N. O. Paterson
*G. E. Paxon
A. R. F. Thompson

* Have now qualified.

Papers by Guy's Men

Norman Burgess. Eczema and dermatitis. *Bristol Med. Chir. Jour.*, 1935, lii, 103.

E. Biddle. A case of B. suipestifer septicæmia. *Brit. Med. Jour.*, 1935, ii, 340.

C. P. Blacker. The uses and limitations of sterilisation in social psychiatry (Abridged Report). *Proc. Roy. Soc. Med.*, 1935, xxviii, 1353.

Maurice Sorsby. (1) Persistent epistaxis: thrombocytopenia; (2) Polypoid hæmangioma of pharynx *Ibid.*, 1430-1431, Sect. Laryngol.

R. Brooke. Generalised osteitis fibrosa: rapid recalcification of bone after complete parathyroidectomy. *Ibid.*, 1366, Sect. Orthop.

P. M. F. Bishop. Pregnancy test in relation to death of ovum. *Lancet*, 1935, ii, 364.

Changes of Address

G. B. Palmer, Mental Hospital, Auckland, New Zealand.

Appointment

J. L. Bates, Assistant Medical Officer, Kingseat Mental Hospital, Newmachar, Aberdeenshire.

Marriage

RECKITT-TAYLOR—At Christ Church, Lancaster Gate, on August 10th, 1935, V. B. Reckitt, M.B., B.S., to Mollie Harrison Taylor (S.R.N.).

Births

DINGEMANS.—To Margery (née Spong), wife of S. A Dingemans, Preston House, Steyning, Sussex, —a son.

CORFE.—On August 23rd, 1935 at 27, Welbeck Street, to Joyce (née Figgins), wife of Felix L Corfe, M.R.C.S., L.R.C.P., L.D.S., of Muswell Hill—a son (Robert Nigel).

Death

GOWAN.—On August 22nd, 1935, B. Campbell Gowan, of Bournemouth, Hants.

EDS. {P. W. C. M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX *28th September* 1935 *Number* 1231

PASSIM

IN a short time Bright will cease to be used as a ward for paying patients, who will find their new accommodation in Nuffield House, and the question will naturally arise as to the purpose to which the resulting unoccupied space will be put. We are told that Bright may then be used as the Children's Ward, and it seems that the present is a suitable opportunity for voicing an old grievance of more than twenty years' standing —a grievance which compels attention.

The importance of pædiatrics in general practice is indisputable, and it is a field in which, on the whole, the newly qualified practitioner has less knowledge and makes more blunders than in any other connected with medicine. This is a criticism from which Guy's men are by no means immune, and we may well wonder why it is. It cannot be a question of the teaching, for it is a just claim of which we may be proud that the teaching of pædiatrics at Guy's is probably better than at any other London Hospital. Nor is it a question of the Out-Patient material, for it may not be known that the attendance here at Children's Out-Patients, with the exception of that at St. Thomas's, which equals ours, is not even approached by any other teaching hospital. This must mean that there is a great wealth of clinical material, but this advantage is offset by the fact that, with the exception of St. George's, we have less In-Patient accommodation than any of the other great voluntary hospitals in London. It is the logical conclusion that this lack of In-Patient accommodation must be at least in part responsible for the deficiency of pædiatric knowledge in the equipment of the young practitioner. Nor will this deficiency be remedied until active measures are taken to overcome it. The present state of affairs is such, and had long been so, that there are in the Children's Department more students than patients, and this is a condition which does not obtain in any other department of the Hospital, and should not be allowed to continue.

A comparison of our Out-Patient and In-Patient statistics shows the handicap under which we are placed when compared with those of the other great voluntary hospitals. For example, we may be surprised by the fact that St. Thomas's Hospital, with an Out-Patient attendance of the same order as our own (more than 3,800 a year, *and this refers to new cases alone*), has an In-Patient accommodation larger than ours by more than half as much again. The discrepancy between our available material and our facilities for using it, when compared with similar figures from St. Mary's, is amazing, but when compared with those at University College Hospital it is grotesque. St. Mary's has an In-Patient accommodation of 28 cots for an Out-Patient attendance of 371 new cases a year, but University College Hospital has 38 cots for an Out-Patient attendance of 576.

Hospital	*No. of Medical Cots*	*No. of New Cases at Out-Patients per annum*
King's	39	1,010
University College	38	576
St. Mary's	28	371
St. Thomas's	20	3,859
Middlesex	24	755
London	26	about 3,000
St. Bartholomew's	18	600
Charing Cross	15	—
Westminster	13	675
St. George's	11	—
Guy's	13	3,800

It must be exceedingly discouraging for the pædiatric staff who have built up this magnificent record of attendance that the accommodation should be so limited, the more so as this is in spite of the most energetic efforts on their part to obtain more adequate provision. This also may not be gene-

rally known, and by most of those who knew it it has by now probably been forgotten, that more than twenty years ago Dr. Cameron had not only approached the authorities, but had agreed with Sir Cooper Perry on plans which had actually been drawn up and approved by King Edward's Trust, for the provision of a Children's Ward, with no fewer than eighty cots.

The benefits that might have accrued from this move are immense. But important though it was this project was shelved. The immediate reason for this was the necessity at that time for enlarging the Nurses' Home, which diverted attention from the proposed building of a Children's Ward on the top of Hunt's House. Nor was the proposal taken up again, for the war intervened, and after the war it was prevented by the increased hospital expenses, until, through the generosity of the residents in Bermondsey and Rotherhithe, the old Children's Ward in the Park was built as a War Memorial. Although the accommodation of 13 cots thus provided fell short of the original plan by about five-sixths, this constituted a great advance, and the children had the further advantage that they were provided with a ward in front of which was a grass playground in which they could get the benefit of sunlight and fresh air.

The children remained thus housed until just a year ago, when they were moved upstairs to occupy the Maze Pond half of John Ward, owing to the erection of Nuffield House. This had the double disadvantage that the intake into John was restricted by half, and that the children had no facilities for enjoying the open air. But it was the best thing that could be done in the circumstances. There is now, however, no reason why it should continue. As soon as Nuffield House is opened, which should certainly be by the end of November, there will be unoccupied space in Bright Ward, and it seems that there is at last an opportunity of introducing this long-overdue reform. The children have a claim on this space which is second to none, a claim that has been too long ignored. But the matter should not be considered from the standpoint of statistics only; not only should we be able to increase the accommodation, but we should also seize this opportunity of providing facilities to allow the department to take its place as the leading pædiatric clinic in London.

It should be possible to introduce at the same time three much-needed reforms. In the first place, advantage should be taken of Bright's proximity to the roof to allow of the construction of a proper playground where the children can have the benefit of sun and open air. In the second place, it should be possible to make architectural arrangements for a small isolation block. Such provision would militate effectively against cross-infection, which is so prevalent a scourge in any children's ward not so equipped. These two reforms, we admit, depend upon financial circumstances, but the third reform that we would suggest is independent of such objections and should, we think, be enforced apart from any other considerations, and whether or not the Children's Department is enlarged. It is this. At the moment pædiatric teaching is seriously hampered by the regulation that does not allow any child over the age of seven to be taken into the Children's Ward. This is an age which cuts across the whole field of pædiatrics, and the attempt that is made to teach the subject as a complete study is frustrated by this purely arbitrary division. Our children's physicians are unanimous in the view that this age should be raised to ten at least, and preferably to twelve. A further reason for this alteration of the age limit is that it is undesirable on various grounds to have children in general wards. In the first place, it is a nuisance to adults who need peace and quiet to have to listen to the noise of a child rendered fractious and undisciplined by illness, but far more serious is the effect on the child. Whereas a child of seven or eight may be unmoved by the screams of other children, it may be most adversely affected by the sight and sound of adults in obvious distress, or in circumstances in which they may exhibit lack of control. This reform we must urge apart from the others. To those which deal with the enlargement and architectural arrangement of the department it is certain, and only natural, that objection will be raised on the grounds of financial difficulties, and it cannot be denied that this objection would be a very real one. But at the same time we would urge that in the event of any special appeal to the public in the near future, it is the needs of the children that should be considered first.

It is not only with a view to the better understanding of pædiatrics, but with a very deep sense of the inadequacy of the provision made for the Borough children by this, their own, Hospital, and of the very exceptional opportunity that now exists for improvement in this direction that we draw attention to the needs of the Children's Department.

WE are glad to see in the recent editions of the *Lancet* and *British Medical Journal* the memorandum to the British Red Cross Society signed by members of the visiting staffs of the various teaching hospitals, appealing for the formation of an Oxygen Tent Service. We hope this is a sign that Dr. Poulton is obtaining the further recognition that we feel is his due for his important work in this field.

WE would like to draw attention to the fact that the coming concert to be given by the orchestra of the Musical Society will be an event of interest to all musical people at the Hospital. The date is Thursday 24th October, with a repeat performance on Friday, 25th October.

It is of interest to note here that the solo vocalist of the evening, Augustus Milner, originally qualified in Medicine at the University of Minnesota. A singer of international eminence, he was born in Ireland, and went to America at an early age. On qualifying there he went to Berlin to study singing, eventually becoming renowned in grand opera as a singer in dramatic baritone rôles. He sang in all the principal Continental opera houses, and was chosen by Richard Strauss to sing the baritone parts in all his operas, often singing under the baton of Richard Strauss himself. Busoni wrote rôles for him in three different operas, and dedicated several songs to him. On the 24th and 25th October he will be singing "Don Juan's Serenade" (Tchaikovsky) and "The Two Grenadiers" (Schumann).

Herbert Templeman will be playing the Vivaldi Concerto in A minor for violin and orchestra.

The works to be played by the orchestra include the Second Movement from Tchaikovsky's Fifth Symphony, excerpts from "Carmen" (Bizet), a Slavonic Dance by Dvorak, "Shepherd's Hey," a folk dance by Grainger, and the Overture "Sakuntala," by Goldmark, a work which is now becoming known by its inclusion in the repertoire of the Vienna Philharmonic Orchestra.

Readers are reminded that accommodation in the Physiological Theatre is limited, and that early application for tickets is advisable.

WE publish in this issue a clinical lecture by Dr. Paul White, of the Massachusetts General Hospital, on "Chronic Constrictive Pericarditis." Dr. White has already published a comprehensive account of this condition in recent issues of the *Lancet*, but the article which we publish has been specially written by Dr. White for the *Gazette*, and is, both clinically and historically, a less exhaustive but more general survey of the disease. We are very grateful to Dr. White for having given up much of his short time in this country to preparing the article for our publication.

THE Biennial Dinner will take place at the Connaught Rooms on Friday, November 15th. Further details will be published during October. Applications for tickets should be made to Dr. Geoffrey Marshall, at 45, Wimpole Street, W.1.

ALL old Guy's men will have been interested in the article that appeared in the *Evening Standard* of Saturday, September 21st, on Mr. C. S. Darke, the captain of the Rugger XV. All current Guy's men will have been interested to learn that, according to our contemporary, he succeeded in passing his 2nd M.B. within three weeks of his arrival at the Hospital. To the inquiring mind the *Evening Standard* has made it seem as though he must have undergone some fairly extensive anatomical and physiological training elsewhere. We hope that this has not led to any belief that we have been recruiting our teams in that manner which in the past has been so extensively exploited elsewhere, and which we have not been backward in deploring.

WE congratulate the following on their appointment as Clinicals :—

Mr. L. J. Blay	Mr. G. J. Van der Merwe
„ T. G. Humby	„ E. B. Rowe
„ D. N. Leeming	„ E. D. H. Williams

WE regret to hear of the death at Balham of Miss Victoria Jones, the oldest living ex-Matron of Guy's, at the age of 98. Miss Jones will be remembered by many old Guy's men and nurses as Matron from 1882 to 1893.

Miss VICTORIA JONES

The Diagnosis and Surgical Treatment of Chronic Constrictive Pericarditis*

A Lecture delivered at Guy's Hospital on Friday, 12th July, 1935, by Dr. Paul D. White, Massachusetts General Hospital, Boston

* For the complete report of a study of this condition, with detailed case reports, see White, P. D., *Lancet*, 1935, Vol. II, Nos. X and XI.

MR. CHAIRMAN and GENTLEMEN,—When I was asked to speak here to-day I did not hesitate, for I realised not only the honour of being asked to lecture at Guy's, but of being allowed to follow in the very footsteps of important pioneers in the subject on which I am to speak. Chevers, in 1842, and Wilks, in 1870, published very important papers in the *Guy's Hospital Reports*, which I am sure it will be worth your while to read; they describe accurately the condition of chronic constrictive pericarditis. Long after them, in 1896, Pick described three more cases, and unfortunately, because of the prevailing ignorance of the earlier work on the subject, the disease has become commonly known as "Pick's disease."

I shall first define the disease, and the operative measures that may be taken to relieve it.

DEFINITION

Chronic constrictive pericarditis consists of the chronic constriction of the heart and the roots of the great vessels in whole or in part by a thickened contracted pericardial sac, to a degree sufficient to interfere with the proper filling of the heart chambers in diastole. There results what has been well called "inflow stasis" with increased systemic venous pressure resulting in congestion and in varying degrees of dropsy; there is commonly early or predominant involvement of the liver in the process, with ascites, due in all probability either to direct compression of the mouths of the hepatic veins by the pericardial constriction or to marked slowing of the hepatic venous flow (which is more easily slowed than the inferior vena caval flow into which it empties), or to both combined.

There may or may not be obliteration in whole or part of the pericardial cavity itself. There may or may not be calcification of the pericardium. There may or may not be chronic thickening of pleura and peritoneum also (polyserositis); chronic constrictive pericarditis, or Pick's disease, frequently follows acute polyserositis (Concato's disease), but it is not the same thing. The pericardium may be the only serous membrane involved in Pick's disease. Icing or frosting of the liver (Zuckergussleber of Curschmann) is a part of a chronic peritonitis, sometimes present in Pick's disease, but not an essential part of it. The liver is congested and slightly to moderately fibrosed in cases of chronic constrictive pericarditis; it is not so severely damaged as in cases of true portal cirrhosis.

Heart disease itself is not a part of the picture, although in older and more chronic cases the myocardium may be flabby and thinned.

SURGICAL TREATMENT

The only cure, introduced twenty years ago in Germany (Rehn, 1913, and Sauerbruch, 1913), but rarely practised as yet, is pericardial resection. The simple operation of rib removal with freeing of external pericardial adhesions, called Brauer's operation (Brauer, 1902), is wholly inadequate except as an approach to the operative field. Delorme in 1898 had advised pericardial resection, but he spoke to deaf ears. The essentials for success in the operative cure are (1) correct diagnosis, (2) proper selection of an operable case, (3) expert anæsthesia (general), (4) a skilled thoracic surgeon.

Until seven years ago we ourselves took little or no interest in chronic constrictive pericarditis, or Pick's disease. Then we suddenly woke up to the importance of these cases. Subsequently we have collected fifteen of them, six of which have been cured by operation and one other has been in large part relieved.

OUR OWN EXPERIENCE—CASES

The first case* I shall describe is that of a housewife, thirty years of age, who was sent to me on account of obstinate anasarca. She had always previously been well and active, except for having had scarlet fever as a child, appendicectomy at the age of twenty-six, and a quinsy at twenty-seven. Two and a half years before I first saw her she began to have œdema of both feet equally, slight dyspnœa on exertion, and some palpitation, but no pain. These signs and symptoms had increased gradually for a year and a half, when the swelling had involved both legs to the hips, and also the abdominal wall and the belly itself. The dyspnœa had increased somewhat, but was never prominent.

* Case 2 of the *Lancet* paper.

For a year there had been little change in the condition. She was a semi-invalid. She had been studied by several surgeons, and at two hospitals, and had been a puzzle because of the failure of the dropsy to respond to ordinary remedies, such as digitalis, mild diuretics and rest.

Her father and mother, two brothers and three sisters were living and well. One brother had died at twelve years of tuberculosis and one sister had died at fifteen of tuberculosis. She had one child, who was in good health.

Physical examination showed a slender woman with much œdema of the legs and moderate prominence of the abdomen. There was a visible pulse in the neck veins in the upright position. The heart was normal in size, the sounds were good, there were no murmurs, but there was a rather loud third sound at the apex. The heart rhythm was normal and the pulse rate was 84. The blood pressure was 105 mm. systolic and 70 mm. diastolic. The pulse was small. The lungs were clear. The diaphragm was high. The abdominal wall was œdematous, and both legs showed marked œdema extending up to the hips and waist.

X-ray examination showed normal size of heart and aorta, with little or no pulsation of the right heart border, but active pulsation of the left. The left leaf of the diaphragm was displaced upwards by each heart-beat. There was a slight amount of fluid in the right pleural cavity.

The electrocardiogram showed normal rhythm, rate 105, with low voltage of the QRS waves and low T waves in all leads. The T waves in leads 2 and 3 were slightly diphasic.

She was admitted to the hospital on February 10th, 1933, and her pericardium was resected by Dr. Churchill on April 6th. The pericardium that was removed showed microscopically fibrosis but no tuberculosis.

Just before operation the urine and stools were normal, the Hinton reaction was negative, the basal metabolic rate was +5 per cent., and the venous pressure as measured by direct method was 16 cms. The serum protein was reduced to 3.1 per cent. and 4.1 per cent. with albumin 1.5 per cent. and globulin 2.6 per cent. Following operation the serum protein measured 5 per cent.

After operation she had a rapid recovery with complete disappearance of symptoms and signs within one month; a spontaneous diuresis began three days after the operation, and continued to a loss of twenty and a half pounds of œdema fluid. Since her discharge in the last two years she has been in excellent health and has not only resumed the care of her household, but has worked in a mill. She was in excellent health when last examined (May 16th, 1935).

The second case* that I shall present to you was that of a boy aged eighteen, who entered the West Medical Service of the Massachusetts General Hospital on February 23rd, 1933. Two years before his admission he was forced to give up track sports at High School because of increasing dyspnœa. Six months later he began to tire very easily, and three months after that—that is, fifteen months before entry—he noticed generalised swelling of his face every morning, swelling of his legs at the end of the day, and an increase in the size of his abdomen. He had to rest up one day a week, but kept at school otherwise. After graduating, he rested entirely for a month and improved somewhat. A recurrence of his signs and symptoms caused consultation with a physio-therapist, who declared that his heart was bad, and electrical treatments were advised. He improved slightly in the fall, but six months before entry, his dyspnœa and œdema increased, and his weight rose from 156 to 164 lb. A physician prescribed digitalis and a diuretic, and the weight was reduced temporarily. The obstinacy of the dropsy, however, finally caused his entrance into the Massachusetts General Hospital for study.

In the past he had had chicken-pox, measles, mumps, whooping-cough and pleurisy with bronchitis, the last-named six months before he began to have shortness of breath, two years before he entered the hospital.

The family history was good, the father, mother and three brothers being alive and well.

Physical examination showed a lad nineteen years old in no distress, but with massive pitting œdema of both legs, some œdema of the scrotum, moderate enlargement of the liver, a heart of normal size with distant sounds and no murmurs, a regular pulse of 80, blood pressure of 110 mm. systolic and 60 mm. diastolic, and distension of the neck veins. X-ray examination showed normal heart size, thickening of the pleura, increase of the supra-cardiac shadow, and no evidence of pulsation at the right cardiac border. The lung hilus shadows were slightly increased. The electrocardiogram showed normal rhythm at the rate of 88, with inverted T waves in leads 1 and 2. The urine was normal. The blood was normal. The serum protein was 3.3 per cent., increasing to 4.5 per cent. soon after the operation. The liver function was slightly diminished. The basal metabolic rate was —9 per cent.

On April 22nd, 1933, pericardial resection was carried out by Dr. Churchill. A thickened pericardium adherent to the heart was found and removed over the left ventricle, right ventricle, and right auricle. The diaphragmatic pericardium

* Case 3 of the *Lancet* paper.

was resected. There was a small pocket of fluid at the diaphragmatic surface. The right auricle in the region of the inferior vena cava was decorticated. On microscopic examination the tissue removed showed fibrosis. There was a slight decrease of œdema on the third post-operative day, with the onset of definite diuresis on the eighth day. His œdema and ascites were entirely gone in eighteen days, during which time he lost thirty-five pounds of fluid. He has been well in the past two years since the operation (last examination May 16th, 1935).

The next case* is that of a lad twelve years of age who entered the Massachusetts General Hospital on June 30th, 1933, with a story of gradually increasing size of his abdomen over a period of three months. He had no other symptoms or signs, and was annoyed at having to interrupt his usual activities to be treated. Four days before his admission to the hospital his abdomen had been tapped at another hospital, where he was studied, and where calcification of the pericardium had been discovered by X-ray.

In the past he had been critically ill with pneumonia at the age of four years, and had had measles, mumps and chicken-pox between the ages of four and six years, and a light attack of whooping-cough after that. His tonsils had been removed at the age of two years.

His father died of tuberculosis (three months before this boy was born). His mother was living and well.

Physical examination showed a well-developed but not well-nourished boy with heart at the upper limit of normal in size, good heart sounds with a loud reduplicated pulmonary second sound, and no murmurs. The blood pressure measured 90 mm. systolic and 60 mm. diastolic. The veins in the neck, arms and upper chest were dilated. The lungs were clear. The abdomen was somewhat distended (it had been tapped a few days before). The edge of the liver was palpable 6 centimetres below the costal margin. There was shifting abdominal dullness, but no œdema over the legs or lower back. There was no fever before operation. The blood was normal except for a slight secondary anæmia. The urine and stools were normal. The Hinton reaction was negative. The liver function was slightly reduced. Serum protein measured 4.8 per cent. before the operation, and 6.4 per cent. after operation. X-ray examination showed a full-sized heart with increase in the size of the great vessels, enlarged lung hilus shadows, slight thickening of the axillary and apical pleuræ, and a linear area of calcification extending around the entire lower part of the pericardium. The electrocardiogram showed normal rhythm at a rate of 85, low T waves in lead 1, diphasic T waves in lead 2, and inverted T waves in lead 3.

Pericardial resection was carried out by Dr. Churchill on July 12th, 1933. The fourth, fifth and sixth costal cartilages were resected as in most of the other cases. A thick, hard pericardium with areas of calcification was found and resected from the right ventricle, right auricle, and inferior vena cava. Most of the diaphragmatic pericardium was also resected. The pericardium over the left auricle was not cleared. During the first two post-operative days there was vomiting and acidosis, and then rapid improvement began; spontaneous diuresis appeared on the sixth post-operative day and continued for twelve days with a loss of eight pounds of fluid and a shrinking of his girth from 28 to 24½ inches. He has been perfectly well since, during the past two years, and now plays all kinds of games actively, including baseball and football. My last examination of him was on May 16th, 1935.

The next case* that I am about to describe was disappointing in that a complete cure was not effected, but, on the other hand, very instructive, teaching us as we have gone along. It was the case of J. N., sixteen years of age. At the age of nine he had had severe pneumonia with pleurisy. A few years after that and a few years before we first saw him he began to notice enlargement of his abdomen and swelling of his face and legs. Gradually he became incapacitated, and ascites developed so that he had to be tapped.

When he came to us he showed much enlargement of his liver, with ascites, engorgement of the veins in the neck and arms, some dependent œdema, slight to moderate enlargement of the heart with auricular fibrillation and an apical systolic murmur, and a paradoxical pulse. X-ray showed much chronic pleuritis and widening of the mediastinum and poor cardiac pulsation. The original diagnosis of chronic constrictive pericarditis and chronic pleuritis was agreed with, and pericardial resection was advised. Dr. Churchill performed very skilfully an extensive resection of the pericardium which was compressing the right ventricle and right auricle.

After the operation there was only slight early improvement, much to our disappointment. He went home—some considerable distance from us—still suffering from ascites. The next year he returned to us much improved, but with ascites still present; he required to be tapped occasionally.

* Case 4 of the *Lancet* paper.

* Case 7 of the *Lancet* paper.

The original operation had evidently not been completely successful, and so a second operation was done. The incision was made through the old scar, and it took only ten or fifteen minutes to reach the heart, instead of the usual hour spent in getting through the chest wall. There had been no regrowth of thick pericardium, only simple and easily separated adhesions being found. On this occasion the field of operation was extended over the venæ cavæ to a greater degree. Since his condition did not improve after this operation it was felt that the liver might be chiefly involved, and therefore a Talma operation (omentopexy) was done. On laparotomy the peritoneum was found to be smooth with no thickening of the capsule of the liver. A small bit of liver was removed; this showed a slight degree of fibrosis but little definite cirrhosis. The patient remained unchanged by this operation. He is still a problem for us to work on. He may be said to be three-fourths improved as a result of the first operation, but he has continued to require an occasional abdominal paracentesis. Lately we have followed the treatment which Finsen, whose fame rests on his special lamp, adopted in his own case. Finsen had chronic constrictive pericarditis, although the exact condition was not diagnosed until the necropsy. He had treated himself more or less successfully by a rigid restriction of fluid intake and of salt. Under a similar severe régime our patient has kept his ascites under control, so that now he requires tapping only once in two or three months, whereas formerly he needed it every two or three weeks. We believe that the persistence of his trouble is due to posterior pericardial adhesions; X-ray study shows that calcification is present in the adhesions near the left auriculoventricular ring. We are now considering the feasibility and wisdom of one more operation, namely, to resect the posterior adhesions.

(Lantern slides were shown at this point and some are reproduced here photographically.)

The first slide shows the type of case occasionally seen; probably you have all encountered one or two such cases. The picture is of a patient of middle age who for many years has been under our observation. He has a moderate degree of ascites, but, apart from this, is in fair general health. He is occasionally tapped and sometimes takes diuretics. He has refused operation.

The second slide shows the case which was reported from the Massachusetts General Hospital by Dr. Richard Cabot in 1898. The diagnosis was not made clinically, although wonder was expressed during his life as to why there was chronic enlargement of the abdomen with enlarged liver and ascites. Post-mortem, the heart was found encased in a thick pericardium.

Now we come to two sets of striking pictures, the first taken of the first case of all on whom Dr. Churchill operated.* The patient was a girl, eighteen years of age, who for three or four years had been in a chronic state of invalidism, with enlargement of the abdomen, œdema extending even to the face, and slight engorgement of veins in the neck. We gave a poor prognosis, stating that she could expect only a few years of invalidism. After some further study of the problem, however,

* Case 1 of the *Lancet* paper.

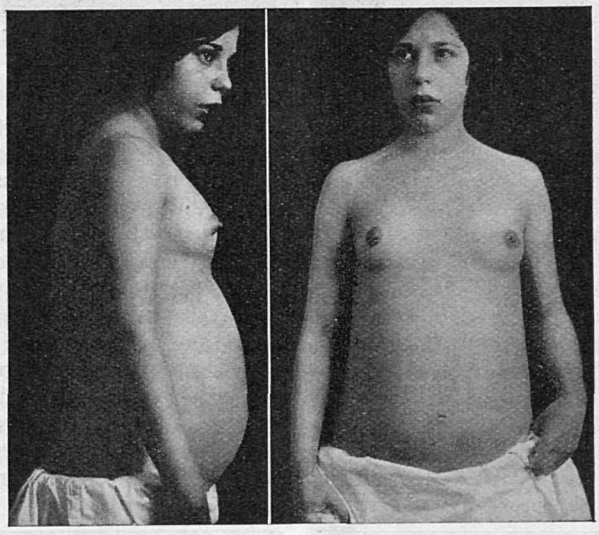


Fig. 1

Dr. Churchill, who had observed Sauerbruch's work in Germany, operated on this patient in 1928. Figure 1 shows the patient at the time of the operation, and Figure 2 one taken seven years later. This young lady is now in perfect health, and has been so ever since a spontaneous diuresis cleared away all her œdema within a few weeks after her operation. She works regularly, and dances, swims and skates with ease. The success of this case encouraged us to investigate the disease further with regard both to diagnosis and treatment; it was a very fortunate beginning for us—back there in 1928.

Even more striking photographs are those of a youngster ten years of age.* When first seen by us she had had five years of invalidism, and her father gave a history in her case of what was probably acute pericarditis at the age of two. Her mother died of tuberculosis a few weeks after she was born. We advised pericardial resection in 1931, but since she was then suffering from an acute infection the operation was postponed. She returned to us two years later, and Dr. Churchill operated. Her recovery was complete, although at the time of operation the right auricle was inadvertently opened. There was, naturally, some hæmorrhage, but since Dr. Churchill had made it his custom to leave some pericardium attached to the heart, it was possible to use this to seal the wound which had been caused. Figures 3 and 4 are photographs of this case taken two years before and one and a half years after the operation; in the latter you can see the scar of the operation.

The electrocardiogram of this case showed inversion of the T waves in lead 2, which is characteristic of some cases of chronic constrictive pericardial disease; others have shown low voltage of all complexes.

The last slide shows a heart from a case which came to autopsy.* Operation had not been feasible because of the patient's serious condition. You can see the calloused parietal pericardium, which was nearly half a centimetre thick. At operation it would have been necessary to peel off both this pericardium and the epicardium, which was also thickened; the pericardial surfaces were adherent. In many cases there is a chronic polyserositis, but in this case there was no involvement of the other serous cavities. This patient had to have the operation postponed for a few months because Dr. Churchill and I were absent in Europe; by the time we had returned the patient was too sick to operate upon. This shows the importance of having more than one surgeon capable of performing the operation; we are now training others to do it.

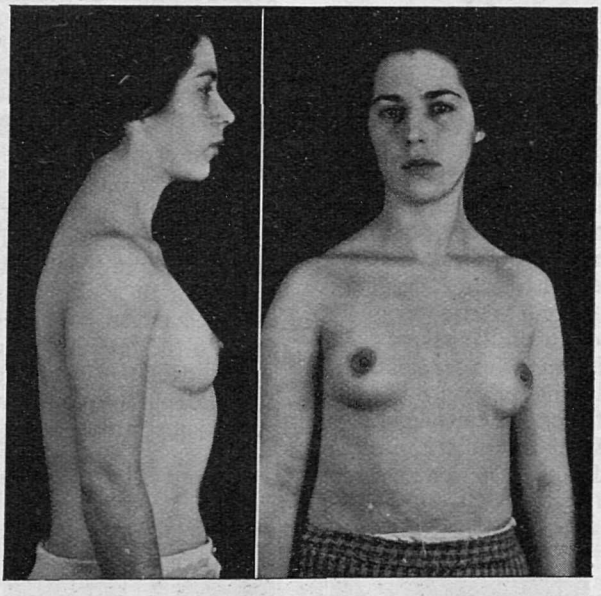


Fig. 2

* Case 5 of the *Lancet* paper.

* Case 10 of the *Lancet* paper.

Naturally young people withstand the operation better than older patients; the former are very tolerant of the handling of their hearts, and it is astonishing how much trauma the heart can withstand. In some cases even during the operation the pulse can be seen to increase in volume while the heart is being freed.

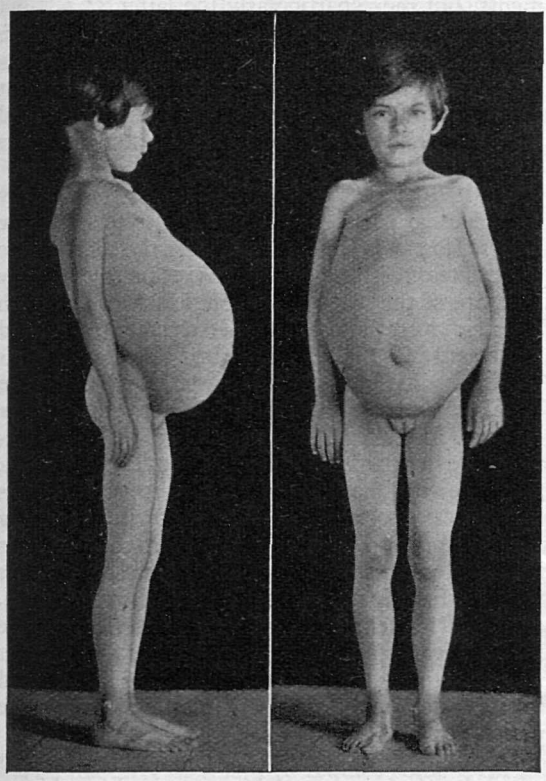


Fig. 3

SUMMARY OF DIAGNOSIS

To summarise, it is obvious to us now that this condition is not extremely rare, certainly not so rare as we were formerly led to believe. There are probably cases of this condition hidden about in "chronic" hospitals or at home, not acutely ill but requiring occasional paracenteses; cases in whom a correct diagnosis has not been arrived at, and for whom the treatment which is available has not been realised. Usually the diagnosis made is that of heart disease or cirrhosis of the liver.

As to ætiology, not one of our fifteen cases had rheumatic fever. Tuberculous, post-pneumonic, or septic infections of the pericardium had been present in some of our cases; in others the ætiological factors were obscure. Of our fifteen cases, besides the six cures and the one other patient considerably helped, three patients died from the severity of the disease itself (two post-operatively), three others died of complications post-operatively, and two are in a mediocre state of health (not operated upon).

The age incidence of chronic constrictive pericarditis ranges from extreme youth to middle age, or even older. Males are somewhat more frequently affected than females.

The most important points in the diagnosis of chronic constrictive pericarditis are the gradual onset of trouble, otherwise unexplained dropsy, and no evidence of heart disease.

Chronic constrictive pericarditis is sometimes confused with mitral stenosis, although the latter should be easily distinguished. We have had two such cases sent for decortication, although they had no chronic constrictive pericarditis; our ante-mortem diagnosis of mitral stenosis was confirmed at necropsy. We did not operate on these cases because a mitral diastolic murmur was present, heard well out in the axilla. This murmur had not been found previously as the other examiners had not listened in the right place. If one finds mitral stenosis in a suspected case the diagnosis of

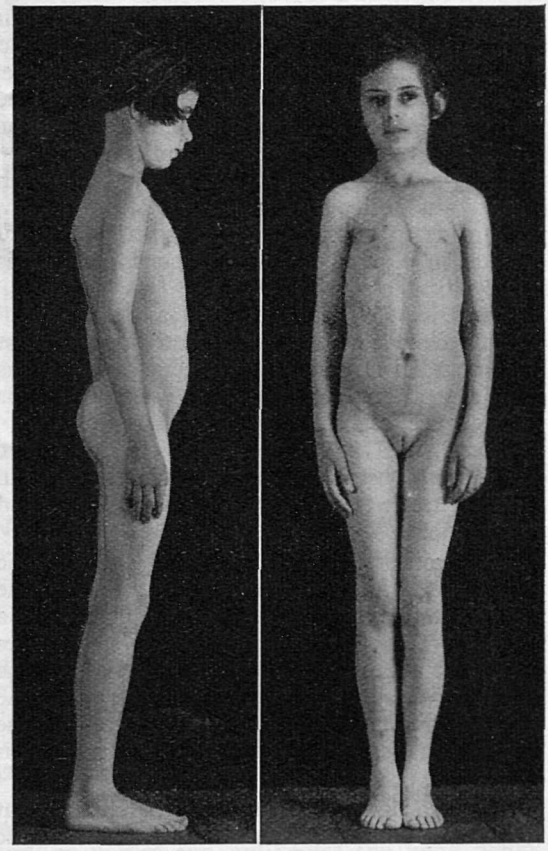


Fig 4

chronic constrictive pericarditis is practically ruled out. With regard to the size of the heart, while in mitral stenosis with congestion the heart is moderately enlarged, in our cases the enlargement was never so great.

True portal cirrhosis of the liver may be confused with the condition we are discussing, but in such cases the age incidence is higher, the histories are different, and there is no engorgement of the veins of the neck.

By some polyserositis and Pick's disease are considered to be synonymous, but they are not; they may and frequently do coincide. Pick's disease may sometimes be confused with tricuspid valvular disease.

HISTORICAL NOTES

Now I will give you a few names of historical interest in this connection, before closing with the moving picture film illustrating the operative procedure.

Of Galen, 160 A.D., it was said that he removed the vertex of the pericardium in the case of a young man who was injured in the games at the Circus at Rome. In that case the sternum was infected, and two incisions had been made without success; Galen was called in consultation, and said that something more radical must be done. He removed a piece of the bone, and exposed the heart and pericardium, and found some of the anterior surface of the pericardium infected; he removed a bit of that. I don't know how much of this was really so. At least Galen knew of pericarditis in animals; he found a pericardial effusion in a monkey and scirrhous pericarditis in a cock.

Lower, in 1669, described "callous pericarditis," and interference with and compression of the heart by pericardial effusion. His term, "callous," is quite a good one, and has been used by various writers since, especially by Kussmaul.

Lancisi, in 1728, gave a good clinical picture of chronic constrictive pericarditis in a case in which a thick adherent pericardium was found post-mortem.

Morgagni described several cases of chronic pericarditis. Although so able a pathologist, he led the world astray on this condition for a hundred years; he described a number of cases of chronic adhesive pericarditis and said that the condition did not interfere as a rule with the patient's life, and he mentioned among others the case of an active fisherman in support of his contention.

And then, fortunately, there appeared a man at Guy's in 1842 named Chevers who gave to chronic constrictive pericarditis its worth; his observations were so important that I shall read you a short paragraph from his work:—

"The principal cause of dangerous symptoms in cases of the above description appears to arise from the occurrence of gradual contraction in the layer of adhesive matter which had been deposited around the heart, compressing its muscular tissue and embarrassing its systolic and diastolic movements, but more particularly the latter."

Hope had said that a big heart results from pericardial adhesions. Chevers said that that was at least sometimes not true; in his first patient reported in this connection there was a congested liver, a thick adherent pericardium, and no heart disease.

In 1870 Wilks wrote an excellent and very illuminating paper on this same subject in the *Guy's Hospital Reports*, and shortly after these same dates (1842 and 1870) two Germans, evidently unaware of the work of the Englishmen, put forth their views on the subject: Griessinger (1854) and Kussmaul (1873). Then came Pick with his emphasis on the liver enlargement and ascites in 1896. Amongst other important contributors was Delorme, in 1898, who, as I have already mentioned, said that the condition could be cured; for three years he had been trying to persuade his surgeon to operate on the condition by resecting the pericardium, but they had not followed his lead, and so finally he published his advice to the world. Finally the Germans came forward again, and in 1913 Rehn and Sauerbruch carried out the first pericardial resections. The last important step to date has been the classical paper by Volhard in 1923 on the diagnosis of chronic constrictive pericarditis.

In the United States we have three centres which have taken a special interest in this subject: Cleveland with Dr. Beck, Nashville with Dr. Burwell, and Boston with Dr. Churchill and myself. I understand that Mr. Roberts, at St. Bartholomew's Hospital here in London, has successfully operated on a case recently.

I am looking forward, gentlemen, to the resumption by Guy's Hospital of a leading rôle in this field.

A moving picture was shown illustrating the technique of the operative procedure of pericardial resection in two cases.

The Editor will, at all times, be glad to consider articles or sketches, provided that they are accompanied by the writer's name and address, not necessarily for publication. Authors who desire reprints of their papers should make their own arrangements with the Printers when they return their proofs. All contributions to be addressed to *The Editor*, who does not accept responsibility for the views expressed by contributors

Some Remarks on the Treatment of Fractures

By Mr. J. S. Batchelor.

THE treatment of fractures is a branch of Surgery in which the attainment of a result satisfactory both to the patient and his doctor is fraught with difficulties. It is often true that the patient who has had his abdomen opened and some part of its contents removed is more grateful than he who has had a broken limb mended; and should, perchance, the limb be not quite as shapely as its fellow, an adverse and even bitter criticism not infrequently occurs. For the sins within are less obvious and provoking than those without.

There has resulted a disinclination to deal with fractures, and often a lack of interest, which is reflected in their treatment. Fundamental principles have been forgotten in the effort to find methods which will produce rapid and brilliant results, and, whilst emphasis has been placed on the importance of primary reduction, there has been a failure to appreciate the important principles of "after-treatment." In this paper it is proposed to discuss some of the principles involved and the errors which occur in treatment, and to describe briefly their application in certain cases.

Treatment may be discussed under four headings:—

1. Anæsthesia.
2. Reduction.
3. Immobilisation.
4. After-treatment.

I.—ANÆSTHESIA

The majority of fractures require some form of anæsthetic for reduction. The types of anæsthesia available are regional, general or local, and of these local anæsthesia is particularly convenient in fracture work, because the presence of a large fluid hæmatoma around the fractured ends makes infiltration with novocain easy. Its employment is indicated in those fractures where the process of reduction requires both the co-operation of the patient and a prolonged period of analgesia in which repeated adjustment of the position may, if necessary, be made. Such fractures are those around the lower end of the radius and upper end of the humerus. It is also useful in cases where general anæsthesia is contra-indicated by reason of age, shock or other associated injuries. It has been suggested that its use may lead to delayed union, but this has not been found in practice.

When local anæsthesia is not specially indicated, many fractures can be satisfactorily dealt with under general anæsthesia. In the event of general anæsthesia being unsuitable, regional anæsthesia is useful in old-standing fractures where organisation of the fluid hæmatoma makes local infiltration impossible.

II.—REDUCTION

In reducing a fracture it is customary to attempt to re-appose the fractured bone ends, if displaced, and to restore the axial alignment. The importance of these two aims varies in different cases, though if both are attained the resulting anatomical perfection increases the possibility of a perfect end-result. By skilful treatment at this stage it is possible in the majority of cases to obtain a satisfactory position by closed manipulation, and thus to reduce the number of cases that require either immediate or subsequent operation.

In considering the respective merits of end-to-end apposition and axial alignment, it should be realised that in some cases the latter is infinitely more important than the former. Where the fracture is situated in a long bone at some distance from the neighbouring joints, a functionally perfect result can be obtained even where the fractured ends are displaced by as much as the whole diameter of the shaft, provided that axial alignment is correct and there is no shortening. Often too many attempts to obtain perfect end-to-end apposition may do more harm than good. Where, however, the fracture is near a joint, both apposition and alignment must be restored, otherwise a troublesome arthritis will develop in later years. On the other hand, fractures of the "separated epiphysis" type in children present an occasional exception to this rule, for here Nature, by her processes of ossification and bone repair, will correct any remaining deformity, whilst operative reduction is frequently damaging in its effects on ultimate growth and function. Nevertheless, in all fractures a perfect anatomical position should always be attempted, and only when this has failed should other factors be relied on for a satisfactory functional result.

Before attempting reduction good X-ray photographs taken in two diameters are essential, whilst where possible a portable X-ray outfit should be available, so that the position may be checked and readjusted if necessary before fixation is applied.

In all types of fractures it is important, if possible, to attempt reduction before considerable swelling occurs and obliterates the bony points

and contours. This applies particularly to fractures about the wrist, elbow and ankle. It is undoubtedly a fact that if early accurate reduction is performed, the subsequent swelling will be considerably lessened.

In the actual reduction of the fracture, traction and manipulation are the two manœuvres on which success depends, and the method of their application is of the greatest importance.

The action of traction is both physiological and mechanical. By drawing the broken ends apart and relieving pain, or, in the anæsthetised patient, preventing the transmission of painful stimuli, spasm is overcome. By its purely mechanical action shortening and lack of axial alignment are corrected, and by the compressing action of the surrounding muscles end-to-end apposition may be produced.

In the case of continuous traction full reduction should be accomplished in 24 to 48 hours, and the amount of weight should then be reduced in order to prevent the formation of a gap between the fragments. In general, it is better to use a large weight at the beginning, reducing it later, than have to augment a weight which has proved insufficient. Where manual or screw-traction are used reduction will take some minutes at least, and a strong steady pull is much more effective than a series of violent jerks which only increase spasm and thus fail in their purpose. Traction should be used in a deliberate and purposeful manner, never hurriedly or with violence.

The direction of the pull is in some cases governed by the position of the proximal fragment, but spasm having been overcome the bone ends tend to fall into line with each other. Errors in alignment are liable to occur, however, when traction is not made in the correct line, especially when a small proximal fragment is acted on by powerful muscle groups.

When all shortening has been overcome, an attempt is made by manipulation to obtain end-to-end apposition should the compressing action of the surrounding muscles not have already produced this.

When satisfactory reduction has been accomplished the broken bone must be completely immobilised until firm bony union has taken place.

III.—IMMOBILISATION

There are two common methods of immobilisation—by fixation with a plaster cast, or by placing the limb in a splint and applying traction. I have found unpadded plaster casts preferable in that they are more efficient in providing the absolute immobilisation that is essential for rapid union. In using such casts it should be remembered that the degree of immobilisation provided depends on the thoroughness with which the cast is moulded around the bony points and contours. Padding inside the cast jeopardises this, for it is apt to permit a small amount of movement at the site of fracture, especially when the limb is used. The protection of bony points and the comfort of the cast are ensured by accurate moulding, making padding unnecessary. Padding is a relic of the days when all fractures were treated on straight wooden or metal splints.

It is, however, frequently necessary to split the cast after its application to a recent fracture. This is not, however, a disadvantage in the use of non-padded casts, but rather an advantage, for it ensures that a second well-fitting cast will be applied when swelling has subsided.

In some fractures of the shaft of long bones continuous traction is applied, and it is now generally acknowledged that skeletal traction is more effective than skin traction. Its use involves little danger of infection, although in this respect the wire is safer than the pin.

Although the period of immobilisation must be regulated by the evidence of union at the site of fracture as judged by clinical and X-ray examination, it is better that the period should be too long than too short. In the majority of cases non-union or delayed union is due to one common cause—inefficient immobilisation. Watson Jones has shown that movement at the site of fracture produces a local hyperæmia which leads to the absorption or non-production of calcified callus. Disuse also has a similar effect, causing decalcification of normal bone as well as delay in the formation of callus.

Non-union occurring in a situation where normal union could have been reasonably expected is most often caused by a small amount of movement at the fracture line throughout the period of immobilisation. Union may be delayed by interruption of the period of immobilisation, as in the incautious changing of a plaster, by too frequent attempts at reduction in the early stages, or by readjustment of the position when the callus is soft. Should union fail to occur within the customary period, operative treatment should not be resorted to forthwith, as this frequently does more harm than good; a further period of immobilisation may lead to sound bony union.

Examination of the X-ray films of a case of delayed union often reveals that bone formation has occurred around the adjacent fragments, but not across the actual line of fracture. This is also found when such a case if operated on, the fractured ends, enlarged by new bone formation, being joined together by a thin line of fibrous tissue. A small amount of movement has taken place at this

point, and the resultant hyperæmia has hindered the processes of bony repair. In old-standing cases of non-union the hyperæmia produced by continual movement leads to absorption and rounding-off of the adjacent bone ends.

In the past it has frequently been observed that in fractures of the lower limb union has been accelerated by weight-bearing. This effect was attributed to movement at the site of fracture, but it has been shown that this explanation is erroneous. Functional use of the limb, when combined with efficient immobilisation, assists union by promoting the circulation and preventing the congestion and œdema that occur as the result of disuse.

IV.—AFTER-TREATMENT

In all cases of fracture there is associated injury to the soft parts, and frequently also to the neighbouring joints. By reduction and immobilisation the broken bone is held in position whilst union takes place, but the concomitant injury to muscles, tendons and joints should not be neglected. And it is during the period of immobilisation that the so-called period of " after-treatment " should be instituted.

Injury to soft parts produces a hæmorrhagic effusion in the surrounding areolar tissue which, if not absorbed, becomes organised into fibrous tissue; adhesions result, and, in consequence, limitation of movement. Absorption is hindered by a sluggish circulation and assisted by an active one. In the completely immobilised limb active movements are impossible, but it is still possible to stimulate circulation by active contraction of the muscles.

By active use of the immobilised limb practically all the muscles can be made to contract, and in this way their tone and elasticity preserved and adhesions prevented. Similarly, in the case of a joint, the absorption of the intra-articular effusion is assisted by preserving the tone in the joint capsule. This is obtained by active contractions of the surrounding muscles passing over the joint. Again, active movement is unnecessary, merely active use. The patient must be taught to contract the muscles of his immobilised limb from the very start. This is assisted by active movements of the joints which are free, such as the fingers, toes, ankle, etc., and by free functional use where this is possible.

Whilst early active muscular contractions and functional use are of supreme importance, early massage of the fractured limb and passive movements of the joints are definitely harmful. By aggravating inflammatory changes in the muscles and tendons around the fracture their use frequently leads to an increase of pain and weakness, with resultant limitation of joint mobility and prolongation of incapacity. By producing movement at the site of fracture they will delay bony union, and may break down a tender callus. Too often is " Early massage and movements " the slogan and refuge of those who do not properly understand the treatment of fractures.

It is essential to give careful instructions to the patient whose limb has been immobilised as to what he can and should do. The patient with a fracture is inclined to regard his injury as completely disabling, and, unless told specifically otherwise, will carry his arm in a sling for weeks or spend all day with his fractured ankle on a couch. This " fracture psychology " should be discouraged, and he should be told to forget his fracture and use the limb as much as the immobilisation allows. The housewife with a Colles' fracture is more likely to follow instructions if she is told that she may do housework than if she is given a series of exercises to perform each day at home. On the other hand, the patient with a fractured femur must be carefully instructed in contracting his thigh and leg muscles, and in exercises for the foot and ankle.

If, however, after the period of immobilisation residual joint stiffness makes special treatment necessary, it is essential that it should be carried out along correct lines. " Active movements " are the key to success, and with functional use will result in a rapid return of mobility and muscular power. Passive movements, muscle kneading and skin polishing are useless, and merely produce in the patient temporary comfort and prolong the sense of incapacity.

To sum up, limitation of joint movement after a fracture is due to intra- and extra-articular adhesions and muscular wasting. By active muscular contractions these are prevented, and thus the necessity for a prolonged course of physiotherapy is avoided and the period of disability reduced to a minimum. The assistance of the masseuse should be invoked from the beginning, and it should be her duty to teach and assist the patient to perform the necessary muscular contractions and exercises. In this way her skill will be used in preventing adhesions and wasting from occurring, rather than in the tiresome task of overcoming them when they are firmly established. In the majority of cases treatment following cessation of immobilisation should be confined to a short period of active use of the limb by the patient.

I shall now consider briefly the treatment of some common fractures.

FRACTURES OF THE LOWER END OF THE RADIUS AND ULNA

These include Colles' fracture, chauffeur's fracture and fractures of the lower third of the shafts. Fractures in this region are best reduced under local anæsthesia, and it is also desirable, if the best results are to be obtained, that reduction should be attempted before considerable swelling occurs.

Posterior displacement of the lower fragments and shortening occur together in many of these fractures. By traction the shortening is overcome, and it is then possible by manipulation to reduce the posterior displacement. Other deformities, such as radial deviation and rotatory displacements, will disappear with traction.

Following injection of the fracture with novocain, the patient sits in a chair with the arm abducted at the shoulder and flexed to a right angle at the elbow. Counter-traction is provided by a roller towel, folded to a width of four inches, which is put around the upper arm just above the elbow and fixed to a firm support behind the patient.

In the case of the right arm, the surgeon grasps the patient's hand with his right hand in the hand-shake clasp and exerts strong, steady traction for a few minutes until shortening has been overcome. With his left hand he manipulates the fracture. The fingers of the left hand support the lower ends of the shaft of the radius and ulna in front, whilst the thumb presses against the lower fragments behind. The patient's hand is now dorsiflexed whilst the operator's thumb takes purchase against the lower fragment, and with a strong pull and palmar flexion of the patient's hand the thumb presses the lower fragments downward and forwards into place. This movement is repeated until examination of the bony points reveals that the fracture is completely reduced.

Immobilisation is provided by a light dorsal plaster cast which extends from the base of the knuckles to just below the elbow. This is applied whilst an assistant exerts traction on the thumb and first three fingers, thus preventing further rotatory displacement, and is carefully moulded around the hand and wrist to ensure complete immobilisation. The forearm and hand are placed in the position in which finger movements are most free—that is, with the forearm midway between pronation and supination, and the wrist midway between extension and flexion. It is quite unnecessary to dorsiflex the hand, for in this position the fingers cannot be fully clenched, and there are no advantages as regards maintenance of reduction, or resumption of function. Provided the hand is placed in a reasonable position in which free functional use is possible, there is no relation between the eventual range of movement and the position of immobilisation. Thus a full range of dorsiflexion is not guaranteed by putting the hand in this position, nor is full supination ensured by the use of the so-called "supination plaster." Before the importance of functional use and active movements were fully understood, devices of this kind were employed, but they are now unnecessary and may defeat their objects by hindering active functional use.

After-treatment consists of early functional use. Finger movements are started immediately, and in a few days' time the patient should be able to clench the fist, carry weights and perform the movements of pronation and supination. A sling may be used for the first two or three days, but it is soon discarded, and the arm and hand are used actively until the plaster cast is removed in five to six weeks' time. Many patients can return to work a few days after the accident. In this way the muscles of the hand and forearm are actively contracted, their tone preserved and adhesions prevented. When the plaster is removed, movements at the wrist are free and massage treatment is unnecessary.

FRACTURES OF THE UPPER END OF THE HUMERUS

Fractures of the upper end of the humerus may be divided into two common types—fractures through the surgical neck and fractures through the tuberosities (per-tubercular fractures). In fractures of the surgical neck the upper end of the lower fragment tends to be displaced inwards and in front of the head. In per-tubercular fractures the shaft is displaced inwards in relation to the head and an angle is formed facing outwards. The theory that the upper fragment is abducted by the spinati is incorrect, for in the majority of cases it is in the neutral position, or even adducted. If these fractures are treated in an abduction splint the deformity is frequently increased, the upper end of the lower fragment dropping down and passing inwards and forwards in front of the head.

Fractures in this region are reduced under local anæsthesia. Traction is made in the longitudinal axis of the arm with the arm by the side. In impacted fractures through the tuberosities the fragments are thus disimpacted and then, by a strong lateral pull, the axial deformity with the angle facing outwards is reduced. Where the displacement is more marked and the upper end of the shaft lies medially and in front of the head,

further manipulation will be necessary, after traction has abolished shortening, to obtain apposition of the fragments. This is done by using one hand as a fulcrum on the inner side of the middle of the humeral shaft, and adducting the elbow across the body. By this manœuvre the upper end of the shaft is brought into relation with the head, and by releasing the traction, which has been maintained throughout, the fragments slip into position.

The patient sits in a chair with the arm by the side and the elbow flexed to a right angle. A small roller towel is placed around the forearm and the patient's hand is supported by an assistant. The surgeon now stands at the side of the patient and places his foot in the free loop of the towel. By pressing downwards with the foot for a few minutes he is able to exert strong traction, and thus disimpact the fracture or reduce shortening. The subsequent manœuvre will depend on the degree of displacement. Where there is only slight inward displacement of the shaft on the head, this is reduced by grasping the upper arm with both hands and pulling outwards. When the shaft is completely separated from the head, the adduction manœuvre described above is carried out. In these fractures there is little tendency for the deformity to recur when once completely reduced.

The arm is put up in a sling and bandaged firmly to the side. It is kept in this position for a week to ten days, and then active movements of the shoulder joint are started cautiously and gradually increased. Active contractions of the muscles around the shoulder are encouraged from the beginning.

FRACTURES OF THE SHAFT OF THE FEMUR

These fractures are reduced and immobilised by continuous skeletal traction. The wire is passed through the tubercle of the tibia, the whole procedure being carried out under local anæsthesia.

Traction through the tibia has definite advantages over traction through the lower end of the femur. It is easier to perform. It is without danger. If the wire is passed through the lower end of the femur its presence amongst the muscles and tendons makes early knee exercises impossible, and by promoting adhesions limits movements at a later date.

All deformities can be reduced by traction alone, provided that it is applied in the right line. Shortening and axial deformities are abolished, and by the compressing action of the surrounding tube of muscles circumferential displacements are reduced. The direction of the pull or, in other words, the position of the distal fragment, is of importance, because owing to the action of strong muscle groups any error in this respect may lead to persistent deformities. Thus in fractures of the upper third of the shaft the proximal fragment is flexed and abducted. Traction must be applied with the leg strongly abducted and flexed to about 40°. In fractures of the middle third of the shaft only slight abduction is necessary, and flexion of 20°—30°. In fractures of the lower third the most marked deformity is posterior displacement of the upper end of the lower fragment, due to the action of the gastrocnemii. Traction with the knee flexed relaxes the gastrocnemii, and allows correction of this deformity.

The limb is slung in a Thomas's splint bent so that the knee is 30° flexed. In an adult male the correct weight to put on a fractured femur is 40 lbs. counter-traction being provided by raising the foot of the bed 18 inches. This reduces the deformity in 24 to 48 hours, and at the end of a few days the weight is reduced.

Knee joint stiffness frequently follows fractures of the femur, and is due to muscular wasting, adhesions at the site of and in the muscles around the fracture, and possibly to the presence of an overlooked sprain of the joint. By commencing active contractions of the quadriceps and hamstring muscles immediately after reduction, much of this is prevented. Muscular power is maintained, the absorption of hæmatoma encouraged, and by preserving tone in the joint capsule the absorption of any intra-articular effusion is assisted. Active movements at the knee joint are allowed in three to five weeks, depending on the site of fracture, but the patient may assist himself by means of a sling around the ankle which is connected by a rope passing over pulleys to the patient's hand. The presence of the wire through the tubercle of the tibia does not prevent a certain amount of movement at the joint.

At the same time exercises for the foot, ankle and leg muscles are assiduously carried out. At the end of six weeks the wire is removed and strapping extension applied to the thigh. Knee movements are now concentrated on.

The leg should not be taken down until bony union is sound, and weight-bearing can then be gradually started. A walking caliper is unnecessary, and is a relic of the days when sound union could not be obtained with certainty. It is better to prolong the period of immobilisation than to discard it before union is sound and sentence the

patient to months in a caliper and possibly non-union.

FRACTURES OF THE SHAFT OF THE TIBIA

In the reduction of these fractures mechanical traction is applied by means of Bohler's screw-extension apparatus. When shortening and lack of axial alignment have been abolished, it is possible to correct circumferential displacements by manipulation. Immobilisation is then provided by the application of a plaster cast whilst the limb is held in the corrected position.

The accurate reduction of these fractures is made difficult by two factors. Firstly, by the torsion displacements that are prone to occur, and secondly because of the natural lateral curve that the shaft of the tibia presents. Thus when the fracture is pulled out forcibly in a straight line, lateral displacement may be produced unless it is counteracted by an appropriate lateral pull. Moreover, if the limb is not immobilised with the foot in the correct position in relation to the sagittal plane of the leg, the eventual result will be marred by errors of gait, such as persistent in-toeing or an excessive valgus deformity. The correct position is with the foot pointing outwards 20°.

It is in these fractures that a portable X-ray outfit is particularly helpful. When the fracture has been extended in the frame and by manipulation put in the best possible position, antero-posterior and lateral views are taken. These are developed immediately and examined, and the position can then be re-adjusted if necessary. By this method a good result can be obtained at one sitting.

In fractures of the lower third of the shaft the leg is reduced in the frame and plastered with the knee flexed to 90°. The Kirschner's wire is passed through the os calcis. The cast is carried as far as the knee, and is subsequently extended to the thigh. In fractures of the upper two-thirds the pelvic support is used and traction applied with the knee held about 5° flexed by a support from above. In order to exert a more direct pull it is better to pass the wire through the lower ends of the tibia and fibula.

It may be mentioned here that if the wire is inaccurately passed, deviation of the lower fragment will occur. Thus if the wire is passed obliquely so that it is on a higher level on the inner aspect of the limb than on the outer, the lower fragment will become adducted when traction is exerted—and if the levels are reversed, the fragment will be abducted. Incidentally, this device may be used to correct certain displacements. Also, if the wire is passed through the os calcis too far back, the foot will be forcibly dorsiflexed during traction, and this may lead to posterior angulation of the lower fragment. The correct plane in which to pass the wire through the os calcis is on a level with the posterior border of the external malleolus, and care must be taken that it lies accurately in the transverse plane. The wire must not pass through the os calcis too close to its lower surface, or otherwise the bone may be split when forcible traction is applied.

With the leg in the frame the screw is turned slowly until all shortening and axial displacements have been abolished. This will take a few minutes. A lateral pull is then applied to restore the lateral curve of the shaft, and by manipulation circumferential displacements are reduced. When all deformities have been fully corrected, the screw is released slightly so that the fragments lock together and any gap between them abolished.

The plaster cast is carefully moulded around the bony points—the malleoli, the tuberosities of the tibia and the condyles of the femur. Delayed union is common in these fractures, and is more commonly due to incomplete immobilisation than to any other cause. In all cases the foot is fixed at a right angle if possible, but no force should be used in procuring dorsiflexion, as this may lead to backward angulation at the site of fracture. The knee should be slightly flexed in order to prevent rotatory movement at the fracture.

Where there is no likelihood of the fracture becoming displaced, weight-bearing is allowed in a few days' time. In oblique fractures and where there is much comminution weight-bearing should not be permitted for at least six weeks. With a little practice the majority of patients can learn to walk and get about actively in their plaster. Despite the fact that the leg is immobilised, the act of walking produces active contractions in the muscles, thus promoting the circulation, assisting callus formation and preventing the formation of adhesions, muscular wasting and bony atrophy. During the period immediately after reduction, and before weight-bearing is allowed, the patient should perform voluntary contractions of the various muscle groups, combined with active exercises of the toes.

Tropical Medicine—Some Mistakes

By "Stanley"

I HAPPENED to be talking to a senior student a few days ago, who hopes to go up for the Final Conjoint next time, and the conversation got round to the subject of tropical medicine. We began discussing malaria, and I was not surprised to find that he was quite convinced that the malaria parasite *always* appears in the blood as a "crescent." It was explained to him that the "crescent" is only the gametocyte or sexual form of *one* variety of parasite, namely, that of malignant or subtertian malaria. The gametocytes of benign tertian and quartan forms are spherical. These forms cannot cause an "attack" until they have passed through the sexual cycle in the body of the mosquito and assumed the asexual form. I showed him some specimens of asexual forms under the microscope, including "sporulating bodies" or schizonts, and explained that the only schizonts seen in the peripheral blood are those of benign tertian and quartan malaria, except under unusual circumstances, because sporulation or schizogony in the case of malignant malaria *always takes place in the capillaries*. This may account for some of the special forms of malignant malaria such as the cerebral and abdominal types, in which the "swarming" takes place in the capillaries of some particular region. To find malignant schizonts in the peripheral blood is always a serious omen.

As he was interested, we next discussed dysentery. His conception of dysentery was that it is a "disease" characterised by acute abdominal pains and profuse diarrhœa, with the passage of blood in the stools.

I tried to give him a different idea, which was *not* to regard dysentery as a "disease," but as a "syndrome" characterised by (1) frequent stools, (2) colic, (3) tenesmus, and (4) the passing of blood and mucus in the stools. The underlying lesion in this syndrome is an ulceration of the large bowel, and it is that which causes the symptoms. The causes of such a lesion are numerous, and they may all give rise to the dysentery syndrome. The ulceration may be syphilitic or tubercular, or due to malignant disease. It may be due to helminths, particularly the schistosoma mansoni, which normally affects the lower bowel. It has been said to occur as a trophic condition in certain diseases of the spinal cord. "Acute dysentery" as the term is commonly used, may be due to bacterial causes, and each year almost some new organism is incriminated or finer distinctions are drawn between the known varieties. The common ones are the various Flexner organisms, B. Shigæ (one of the most virulent), Morgan and Sonnè. Bacillary dysentery occurs in *epidemics*; it is accompanied by fever and toxæmia, and the stools may be "uncountable," small in quantity but passed with intense colic and tenesmus, and not foul-smelling. It is possible for the disease to be so virulent and so acute that the patient dies from toxæmia before he has had time to pass a single dysenteric stool. But it may be so slight that there are merely one or two loose motions, hardly any rise in temperature, and no interruption of the patient's normal routine.

Protozoal dysentery is due to infection with certain protozoa. The common one is Entamœba histolytica, and this is the agent in "amœbiasis" or "amœbic dysentery." It is an *endemic* disease which is afebrile in the absence of complications, or practically so. The stools are by no means as frequent as in the bacillary type, but they have a foul odour. Often there are not more than half a dozen in the day. The importance of the disease is the liability to metastases, the commonest site being the liver, where it gives rise to "hepatic amœbiasis," or, as it is commonly but not correctly called, "abscess of the liver." The brain or lung may also be affected.

There is another protozoon which readily causes a severe and sometimes fatal dysentery, the Balantidium coli. This parasite is found in the intestinal canal of pigs, and the persons usually affected are those who are engaged in tending them. It is by no means unknown in this country, and the occurrence of the dysentery syndrome in farm employees should always suggest the need for an examination of the stools.

During convalescence from bacillary dysentery it is common to find large number of Entamœba coli and flagellates—particularly chilomastix and trichomonas—in the stools. It is important to bear this in mind, for E. coli may be easily mistaken for E. histolytica. Ingested red cells are never seen in the former. As for the flagellates, they may keep up a mild diarrhœa if in large numbers, but they are not pathogenic.

It is a mistake to think that any form of dysentery is purely a "tropical" disease. Bacillary dysentery is very common in England, especially in country villages which depend on domiciliary wells for their water supplies. This connotes carriers as a natural reservoir. I saw quite an

extensive epidemic in a village not long ago. In nearly every case the cardinal signs of the syndrome were present, but the Medical Officer of Health, who had had no tropical experience, regarded it as " epidemic diarrhœa " of a severe form. He had failed to culture pathogenic organisms. This was hardly surprising, as the specimens had been sent by post. They are delicate organisms and usually die in the post. I was able to convince him by means of agglutination, which is usually more satisfactory unless there is a laboratory close at hand, but an endeavour should also always be made to send a specimen of stool by special messenger to the laboratory. Amœbiasis is not unknown in England.

A remark of my student friend recalled another mistaken idea about medicine in the Tropics. He asked me whether I felt strange at first on returning to England and seeing " ordinary diseases " again.

" Ordinary diseases " are just as common, in fact some of them are commoner, in hot countries as they are in England. There are the usual specific fevers, rheumatism, tuberculosis, dyspepsia, etc., and what are commonly known as " tropical diseases " have to be added to one's repertoire and taken into consideration in their proper places when making a diagnosis. Take, for example, a rise of temperature in a patient. At home the possible causes are all cut and dried and the doctor's method of examination of the patient is along lines adapted to the detection of indigenous complaints. In many cases he discovers the cause without much difficulty, because the scope of his search is restricted by the limits of local possibility.

In hot countries not only is it necessary to conduct an ordinary clinical examination for the detection of the sort of diseases met with at home, but this has to be extended to conform to the wider clinical horizon. Early diagnosis and treatment are of most urgent importance in hot countries, because acute pathological processes have a habit of progressing rapidly. A rise of temperature may not necessarily be due to a " tropical " disease. Missing places in the jig-saw puzzle have to be filled in by things like malaria, relapsing fever, sleeping sickness (trypanosomiasis), dengue, phlebotomous fever, yellow fever, kala-azar, acute infectious jaundice (Weil's disease), " seven-day fever," undulant fever (melitensis or paramelitensis), typhus, enteric, hepatic amœbiasis, fevers associated with helminthic infestations, rat-bite fever and plague ; fevers with rashes and without ; with glandular enlargement and without ; with abnormal urine (*e.g.*, blackwater fever), and so on.

In other words, tropical medicine is not merely a special branch of, or appendix to, ordinary medicine. It includes the *whole* of medicine as far as this is known at the present day, and is not restricted in the sense of being solely confined to " diseases peculiar to the Tropics." I sometimes wonder what will be the ultimate effect of air travel upon the geographical distribution of disease. It is worth thinking out as an exercise for leisure moments.

The Great Surgical Operation of Removing a Thigh at the Hip Joint

(Reprinted from the *Norwich Mercury*, Saturday, January 24th, 1824)

Guy's and St. Thomas's Hospitals, January 16th

THIS formidable operation was performed here this morning for the first time, by Sir Astley Cooper, in the presence of some of the surgeons and pupils belonging to these institutions. The number of those present, however, was not so great as on many other occasions, no previous notice of the operation having been given, and this arose in consequence of it having been determined on but a few minutes before its performance.

The patient is a man about 40 years of age, whose leg had been amputated some years ago, just above the knee, since which time the thigh bone had become diseased from the extremity of the stump, up to the trochanter major, and this disease has had such effect on him of late that he has been rapidly sinking under it ; the thigh was of the middle size. On being asked this morning to submit to the operation, he readily consented.

At half-past one the patient was brought into the operating theatre, and placed in the recumbent posture on the table. The femoral artery being tightly compressed at the groin by an assistant (Mr. Key), Sir Astley, standing on the outer side, with the limb in one hand and the catlin in the other, commenced the operation by making an incision just below Poupart's ligament, a little to the iliac side of the femoral artery ; this was continued obliquely downwards and outwards to the back of the thigh, about one-third of the way

down, from which point the knife was carried in the opposite direction, obliquely upwards and inwards, to meet the first incision, by this means forming an elliptical curve. At this step of the operation the femoral artery was divided, to which a ligature was immediately applied; the skin and cellular membrane were merely cut through at first, but the knife was again carried in the same direction as before, and thus the muscles were also separated. At this step also it was necessary to apply another ligature. Here the operator changed positions, and sat on a chair in front of the patient, and waited a short time to see whether there were any bleeding vessels. After the lapse of a few minutes the operation was continued, and very shortly completed, the head of the thigh-bone being removed from the accetabulum without any difficulty.

Two ligatures, in addition to those already used, were applied, making in the whole four; the integuments were brought together and a suture applied to the upper portion. Strips of adhesive plaister, and lastly a bandage, were put over the stump. There were about 12 ounces of blood lost, but it had the appearance of being venous. The limb was removed in the space of 20 minutes, the securing the arteries and dressing occupied 15 more; the whole was completed in 35 minutes. During the operation the man was extremely faint, but some wine being given him and fresh air admitted, he recovered. He bore the operation with extraordinary fortitude, and after all was finished said to Sir Astley, "that it was the hardest day's work he had ever gone through," to which Sir Astley replied, "that it was almost the hardest he ever had."

Correspondence

The League of Nations

To the Editor of the GAZETTE

SIR,—I cannot agree with Mr. Cardew when he implies that the League of Nations is a complete failure. That it is a failure there is no doubt, but there is no doubt also that it is a step forward towards the ideal state of the settlement of disputes by arbitration and not by recourse to war. That being so, it cannot be called a complete failure. However, in the present state of the world I see no possibility of the early emergence of this ideal from the realm of the abstract.

There is an old proverb which has lately fallen into disrepute which states that "A strong man armed keepeth a clean house." Let us consider the British defences in this light. At the moment the nation is equipped with an obsolete Navy, an Army barely large enough to carry out its primary duty of policing the Empire, and an Air Force dangerously under establishment. We are surrounded by nations intent only on rearming themselves as rapidly as possible. The conclusion is obvious; we must take steps to defend ourselves.

Pacifists maintain that if a nation refuses to fight no other nation will attack it. That this is a fallacy will be clear to anyone who has been unwillingly implicated in a street brawl. The man who, in a time of national emergency, refuses to fight for his country appears to me to be fundamentally dishonest. He is "willing to accept the advantages of citizenship without accepting its responsibilities."

It is uneconomic to maintain a standing army adequate for the defence of the country, but there are only two alternatives: one is Conscription, the other the maintenance of a voluntary civilian defence force. The second method has been chosen in the British Empire. We have the Territorial Army, the Naval Reserves, the Auxiliary Air Force, and the O.T.C.'s, but the same story is told of these—they are grossly under establishment, and supplied with obsolete materials.

It seems to me, therefore, that it is the duty of every able-bodied man to accept the responsibilities of citizenship and to fit himself to bear arms in the defence of his country. On the other hand, it should be the duty of the Government to see that the British soldier does not have to fight in defence of other countries, and also that in any future war this country shall not be the aggressor.

No sane person is in favour of war in the settlement of international disputes. I value the continuity of my skin too highly to wish to be involved in a war.

War is no longer a "gentleman's game," but that is no excuse for shutting our eyes to the possibility of war. We must realise that it is more than a possibility; it is a probability.

Yours, etc.,

D. GRAHAM BROWN.

Guy's Hospital, S.E.1.

To the Editor of the GAZETTE

SIR,—I should like to add my views with regard to the League of Nations, which has had the misfortune to be condemned by some of your correspondents. I particularly wish to reply to Mr. Cardew's letter.

Personally I agree with him that the League cannot exercise its functions as an international tribunal to avert any conflict when three of the Great Powers are not its members. On the other hand, I strongly disagree with such an absurd statement as that the League of Nations is a menace to peace and should be abolished, and, furthermore, that it has been an instrument of British and French policies. Apparently Mr. Cardew has been led away by the Fascists or Isolationists of this country. Has he not a more constructive proposition to make than to suggest that the only way to keep peace in this country is to create a colossal fighting force on air, sea and land?

Has he got the solution as to where its upkeep will be coming from? Has he also thought of the situation such a policy would create among the other Powers? Or does he think Rome, Paris, Berlin and Moscow will remain indifferent to such a measure?

Personally, I don't think for a moment that the League can prevent bloodshed, because it represents a code without penalties, and therefore it remains without force. Could it be provided with an army capable of enforcing its decrees? Such an army would not be effective unless it were numerous, and therefore costly. And, being composed of soldiers of every country, it would lack cohesion and would inspire no fear.

The most powerful force the League of Nations can give to its decisions is to establish an economic blockade against States that refuse to obey.

But, in spite of all this, the League of Nations has done much good that we can appreciate, and deserves to be kept up in order to deal with those small important disputes which become the origins of great conflicts unless they are eliminated at an early stage. The world is in a bad way; signs of unrest are seen everywhere. In this atmosphere of instability and menace which envelops the world, in the League lies the hope for recovery, and it is very useful to have a tribunal possessing, in however small a degree, the vestiges of authority and prestige which gods, kings and politicians are losing every day.

Mr. Cardew has darkly hinted that he has another solution; why does he not broadcast it to the world?

Yours, etc.,

B. DJANOGLY.

Danescroft Court,
N.W.4.

To the Editor of the GAZETTE

SIR,—In a recent letter in your columns Mr. Cardew has, in no unequivocal terms, decried the usefulness of the League of Nations, and has even pushed his slender case so far as to assert, on what grounds he does not make clear, that the League has done "incalculable harm." So dogmatic in his assertions and so naïve in his rationalisation is Mr. Cardew that we feel that his letter, every bit as stirring as Lord Beaverbrook's fiery-worded exhortations in the *Daily Express*, should not pass unanswered in your columns.

In his letter Mr. Cardew states that "before the War there was a balance of power—a temporary political equilibrium," and contrasts this state of affairs with the present "sense of false security," which he affirms that the activities of the League of Nations have instilled into us. Definite though these assertions may be, his argument for pronouncing them is far from clear. He continues by stating his belief that if England in 1913 had defined her intentions the Great War could have been averted. Be that as it may, but during the past few weeks Mr. Anthony Eden and M. Laval, working through the medium of the League of Nations, have concluded certain agreements whereby England and France, with the backing of a selection of smaller Powers, have been able definitely to state their proposed course of action if Italian aggression against Abyssinia is begun. Yet Mr. Cardew complains that to-day no one knows where we stand. In 1913 the populations of the individual countries were not even cognisant of the policies of their own governments, far less of those of antagonist countries.

And so Mr. Cardew's enthusiastic fancy lightly turns to thoughts of "five thousand aeroplanes, a standing army of a million men and a more powerful navy" (shall we say a dozen new 30,000-ton battleships at £7,000,000 apiece?). The "ethical considerations" which he mentions in his letter are certainly not the incentive which prompts Mr. Cardew so readily to reject the League of Nations and its more civilised, perhaps for some of us too civilised, methods of international co-operation in favour of brute strength and brute methods.

Far be it from us to suggest that the League of Nations can effect a world-wide Utopia, but the League does provide the means whereby the statesmen and politicians of this world can at least attempt the creation of an international political system effected by civilised methods and not by the lethal application of the more anti-social inventions of our scientists and engineers. And surely it is a misguided philosophy that prohibits future attempts because of past failures!

Mr. Cardew's curt dismissal of the value of the Peace Ballot in his postscript is so glaring a revelation of his capacity as a statistician that little

more need be said concerning it. It is indeed a pity, however, that he coyly refuses to divulge the solution to the world problem which he so modestly claims to possess, but, after all, as he himself has said, " It is only a fallacy that by multiplying an opinion ten million times you increase the chances of that opinion being right."

Yours, etc.,

R. H. S. THOMPSON.
O. I. GREEN.

The Students' Club

To the Editor of the GAZETTE

SIR,—It does not appear to be universally known that members of the Clubs' Union are able to get books from Mudie's Library, the scheme for which is as follows : By depositing the sum of 10*s.* 6*d.* a member can obtain one book per week, which includes any book in circulation in Mudie's Library. A borrower remains on the list for a period of twelve months, when he automatically drops out to make room for the next member on the waiting list. I shall be very glad to give further particulars to any interested person.

While on the subject of the Students' Club, I should like to appeal to all members using the Reading Room to treat the periodicals with care. Too frequently I find that periodicals are removed from the cases specially provided and often torn to shreds. If those responsible only gave a little thought to others who want to read them I am sure everybody would be satisfied. It may be as well to draw attention to the following By-law of the Students' Club : " No Member shall take, or permit to be taken, from the Club rooms, or shall injure or destroy any Newspaper, Magazine or other article, the property of the Club."

Yours, etc.,

G. A. R. WINSTON,
Librarian.

The Wills Library,
Guy's Hospital, S.E.1.

The Old Squash Court

To the Editor of the GAZETTE

SIR,—We understand that the Guy's Hospital Catering Co. have been kind enough to offer the sum of £200 towards the rebuilding of the Old Squash Court, but we are also informed that the proposed alterations to the Nurses' Home will necessitate the using of just so much of the Old Squash Court as to make the rebuilding impossible.

That there is need of a new Court will be obvious to anyone who cares to look at the engagement book of the present one, and we feel that it would be a pity if compromise failed and a generous offer had to be turned down for the sake of only a few feet.

We trust that every effort will be made to effect this compromise.

Yours, etc.,

L. C. Thomson.	A. D. Willis.
B. G. A. Lilwall.	D. C. Light.
D. F. Freebody.	A. Crook.
H. R. Harley.	F. Walt.
A. R. Darlow.	J. B. Franklin.
P. M. Davies.	D. Graham-Brown.

Guy's Hospital,
S.E.1.

Reviews

The Chemical Control of Conception. By J. R. BAKER, M.A., D.Phil., with a Chapter by H. M. CARLETON, M.A., D.Phil. Published by Messrs. Chapman & Hall, Ltd. *Price* 15*s.*

THIS is a comparatively small book of approximately one hundred and seventy pages, in which is collected into the form of a monograph a good deal of scientific work sponsored by the Birth Control Investigation Committee and originally published as a series of papers in the *Journal of Hygiene* and the *Quarterly Journal of Experimental Physiology*. A detailed description is given of the various techniques which the author has devised in order to test experimentally the spermicidal action of a wide range of chemical substances in various concentrations. For the most part guinea-pig spermatozoa have been used in these investigations, and great attention has been devoted to the reproduction of, as far as possible, natural conditions by the employment of buffer substances and protein in the artificial suspension media employed in the experiments. While the results are not flattering to the better known commercial contraceptives which as suppository or foaming tablet have a supposedly chemical basis, the authors' work does appear to have established the remarkable spermicidal properties possessed by almost all members of a group of chemical substances which are already familiar as photographic developers, namely, the quinones. There appears to be a possibility that one of these, methyl hydroquinone, may eventually

form the basis of a really effective contraceptive suppository. Incidentally, the experiments clearly demonstrate the definite superiority of ordinary soap for spermicidal purposes over much more frequently advocated substances such as quinine, and also illustrate such points as the entire lack of correlation between spermicidal and bactericidal powers shown by the materials tested. No attempt has been made to investigate the biological consequences of partial damage or incomplete immobilisation of the spermatozoa and the pathological chapter contributed by Dr. Carleton is limited to an investigation of the potentialities for damage to the genital mucous membranes of the rabbit possessed by the more commonly used contraceptives. From these experiments the conclusion appears to be that there are definite contra-indications to the use of quinine in human beings. Some of the substances investigated turned out to have a stimulating effect on sperms when employed in certain concentrations, and the interesting suggestion is made that this property as possessed by quinine might be employed in the human case where sterility is due to feeble motility of the male gamete.

It is impossible to criticise the high technical standard of the work carried out by the authors of this volume, which constitutes an admirably straightforward record of an important investigation. All controversial questions of ethical or social nature have been carefully avoided throughout the book, which, according to the cover, is intended for " the medical man, the chemist, the pharmacologist, the physiologist and the biologist," and meant to be " a contribution to pure as well as applied science." Possibly those interested will prefer this compact fifteen shillingsworth to a tedious wade through a pile of scientific journals.

Sport

Rugby

Guy's v. Old Paulines

GUY'S opened their season on Saturday, September 1st, with a fixture against the Old Paulines, and, after an interesting game, were defeated by 2 placed goals, a dropped goal and a penalty goal and a try (20 points) to a placed goal and a penalty goal (9 points).

Originally it was intended to play the match at Honor Oak Park, but as the extensions to the Pavilion had not been completed, the match was transferred to Thames Ditton.

With one or two exceptions the Hospital relied on the side which represented them last season, and the Old Boys were captained by R. A. P. Hogbin, who had served Guy's so well in previous years.

In spite of the heavy rain which fell before the commencement, the ground was in perfect condition and play was fast and keen throughout.

During the first half Guy's had the advantage of a strong breeze, and for the first ten minutes penned the home side in their 25, but the Old Boys were the first to score. Following a long punt, the Old Boys' forwards worked the ball well into the Hospital half and from a difficult position Low just managed to get the ball over the bar. After this Guy's attacked strongly, and an individual effort by Stanyon-Jaques was finished off by Ziervogel, who crossed for a try, which Dick converted. In scoring this try Ziervogel damaged his leg and was limping for the rest of the game.

Guy's came near to scoring again when Dick and Steytler combined beautifully, but the defence of the Old Boys was particularly keen, and first Dick and then Steytler were brought down when in the act of scoring.

However, the Hospital stuck to their advantage, and were soon rewarded when Steytler obtained possession near mid-field and, taking careful aim, dropped a splendid goal from 40 yards out.

For a time play became scrappy, but the home forwards made a determined effort to storm the Hospital line, and from a five yards' scrum Wiseman broke away and touched down near the upright for Hogbin to convert.

With the wind and sun in their favour the Old Boys started the second half with a forward rush to the Hospital's 25 ; here Hogbin cross-kicked and Guy's were lucky to touch down. Dick set the threes in action, but the movement was intercepted and Johnson-Scott broke through for a good try, which Hogbin converted.

A little later Stanyon-Jaques engineered a fine opening which should have led to a score ; from a scrum in his own half he side-stepped several opponents and worked his way to the full-back before passing to Davies, who was unmarked, but the latter failed to accept the chance and a good opportunity went astray.

After repelling another raid by the Old Boys, Guy's gained a footing in the Old Boy's 25 and the threes made excellent efforts to penetrate a solid defence. However, Guy's received a surprise when a pass to Wright was intercepted by Robertson, and the latter raced the whole length of the field from his own 25, passed Sharp with ease, and scored the most spectacular try of the match.

Hogbin made certain of the goal points by kicking an easy goal.

Just before no-side Hogbin scored from a penalty awarded for obstruction.

The Old Boys fully deserved their success, which was due mainly to their forwards, who were heavier and more together than Guy's. However, the Hospital need not be disheartened at the result of this game, as they showed every promise of developing into a good side. They are all very keen and their team work was certainly much better; there was still a tendency to tackle too high, and the forwards were prone to breakaway too quickly from the scrum. Their work in the line-out has certainly improved, and with a little extra training should do well.

The backs were closely marked and had few opportunities of showing their ability; however, if the scrum-half can get the ball to his backs a little quicker, it will make all the difference.

Team.— E. C. Sharp; R. M. de Gregory, J. van A. Steytler, R. C. S. Dick, C. G. Wright; K. A. Stanyon-Jaques, I. McD. Stewart; C. F. Ziervogel, S. M. Whitteridge, P. K. Hopkins, E. R. Davies, C. S. Darke (Capt.), R. O. Yerbury, W. F. Frazer, G. J. Van der Merwe.

Guy's v. Catford Bridge

ON Saturday, September 21st, Guy's entertained their neighbours, Catford Bridge, for their first home game of the season, and, after an even first half, won comfortably by 4 placed goals, a penalty goal and 2 tries (29 points), to a placed goal, a dropped goal and 2 tries (15 points).

Guy's made several changes in the side which represented them the week previously, the most important being the introduction of C. Halamandres (a scrum-half) at full-back and the restoration of J. van A. Steytler and K. A. Stanyon-Jaques at half-back. In addition, alterations were made in the constitution of the pack, with Kark and French both fit and Ziervogel injured; Darke occupied his best position in the back row, and A. J. Drew, of Ipswich, was brought in to partner Kark and Hopkins in the front row.

During the week both backs and forwards had had extra training in the Gymnasium, in addition to a strenuous practice game which brought to light new talent who are likely to have their chance in the near future.

Halamandres gave a most promising display at full-back, and, judging by the exhibition given in this game, it looks as though Guy's have solved the problem of this particular position. On the other hand, one has yet to see Halamandres faced with more formidable opposition before arriving at any definite conclusions. His positioning, kicking and tackling wgre good; he has plenty of kicking and tackling was good; he has plenty of pluck and, with a little more experience of first-class rugby, he should make good.

The conditions were ideal (perhaps a trifle too warm) and the ground was in excellent condition when the visitors kicked off against a slight breeze.

From the beginning both sides went all out for an early lead, and the exchanges were fast and furious. Catford did their utmost to bustle Guy's off their game and, having obtained a footing in the Hospital's 25, kept up the pressure for several minutes. Eventually McCall obtained possession and, taking careful aim, dropped a goal for the visitors to give them the lead after ten minutes' play.

Guy's retaliated and, following a free kick taken by Dick, Stewart started a fine movement which was checked on the line by some first-class tackling. During the onslaught which followed both Drew and Steytler were held up by numbers when in the act of scoring.

Having survived this fright Williams, the visitors' left-centre, intercepted a pass in his 25 and raced the length of the field before he was brought down five yards from the line. This sudden good fortune inspired the Catford forwards to great heights and, after a series of scrums, Holness forced his way over for a try, which he converted.

This sudden reverse brought out the best in Guy's, and almost immediately they were awarded a penalty for offside, and Dick landed a good penalty goal.

Following an excellent three-quarter movement, De Gregory found touch near the corner flag, and from the line-out the ball was flashed smartly to Steytler. The latter and Dick combined beautifully and faced by the full-back, Dick sent in Wright for a try behind the posts, which Dick converted.

Guy's were now on top and, following a scrum near the visitors' 25, Stanyon-Jaques found an opening on the blind side and, after wriggling his way through the defence, passed to Frazer, who had no difficulty in registering a try in a good position for Dick to add the goal points.

After the interval Guy's had to face the glare of a strong sun, but, in spite of this handicap, went further ahead when Stewart scored an unconverted try.

This was quickly followed by another dangerous movement between Dick and Wright, but Catford cleared their lines and their forwards broke away.

Halamandres cleverly collected a high punt ahead and with a fine kick found touch just beyond the halfway line.

Against the run of play Catford reduced the deficit when Boty stole away from a scrum and sent in Mortimore for a try, which Holness failed to convert.

Having recovered from this shock, Guy's resumed the offensive and played an inspired game. A short-passing movement started by Stanyon-Jaques ended by Davies crossing for an unconverted try.

Another attacking movement between the threes in the visitors' 25 was intercepted and the fast forwards of the visitors appeared certain to score, but Halamandres, with great coolness and pluck, took the ball from their feet and, after deceiving at least three opponents, passed to Wright, who simply forced his way through a surprised defence to score a mangificent try behind the posts, which Kark converted.

With the back division working smoothly another score came almost immediately, when Steytler cut through the centre and created an opening for Dick, who converted his own try in front of the posts.

Near the end a sudden attack by the visitors resulted in Mortimore scoring a snap try too far out to convert.

Team.—C. Halamandres; C. G. Wright, R. C. S. Dick, I. McD. S. Stewart, R. M. de Gregory; J. van A. Steytler, K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, A. J. Drew, E. B. French, E. R. Davies, W. F. Frazer, S. M. Whitteridge, C. S. Darke (Capt.).

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Papers by Guy's Men

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J. R. Forbes. A case of cirrhosis of the liver with ascites due to novarsenobenzol.

I. G. Robin. Leuco-erythroblastic anæmia with an account of four cases.

W. N. Mann. A case of monocytic leukæmia.

D. Evan Bedford, Maurice Campbell and P. H. Wood. The treatment of auricular fibrillation with strophanthin emini.

A. M. G. Campbell and D. A. Davies. Two cases of hyperpiesia with cerebral crises.

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H. J. Starling. Severe melæna from a polyp of Meckel's diverticulum.

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R. H. Blazeby. A case of cerebellar hæmorrhage.

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Philip Reading and J. B. Blaikley. Report on treatment by radium at Guy's Hospital, 1930-33.

J. J. Conybeare. Dyspepsia. *Clin. Jour.*, 1935, liv, 309.

C. S. Hallpike. Recent advances in electro-physiology of hearing. *Jour. Laryngol. Otol.*, 1935, l, 672.

R. D. Passey and Others. Spiroptera cancer and diet deficiency. *Jour. Path. and Bact.*, 1935, xl, 198-199.

G. F. Gibberd. Muscular spasm in the fœtus a factor in the production of malpresentation. *Jour. Obst. Gynæcol. Brit. Emp.*, 1935, xlii, 596.

Ralph Brooke. Wire extension in treatment of mandibular fractures (illus.). *Brit. Med. Jour.*, 1935, *ii*, 498.

Changes of Address

F. Beard, M.B., Chart, 14, Wilmerhatch Lane, Epsom, Surrey.

W. Fergusson Hannay, 53, Upper Brook Street, W.1. *Mayfair* 2464.

C. B. Stainer, L.D.S., 4, Clovelly Road, Southsea, Hants.

Appointment

R. E. Lane, M.R.C.P., appointed by Medical Research Council to Industrial Health Research Board.

Birth

HARRIS.—On September 23rd, 1935, at Fay Gate, Chelmsford, to Eileen (née Wildsmith), wife of H. A. Harris, F.R.C.S.—a daughter.

Death

WORTHINGTON.—On September 14th, 1935, at 23, Jury Street, Warwick, after a short illness, Sidney Worthington, M.D., F.R.C.S., aged 76.

EDS. { P. W. C. / M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

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PASSIM

IT is our first duty at this time of year to welcome the incoming students. This we do, and it is done. They will learn enough in time of the traditions of Addison, Bright and Astley-Cooper to last them a lifetime, and we feel it is not incumbent upon us either to animadvert on these traditions or to offer to our new colleagues such advice as they will find from more able and experienced pens on other pages of this issue.

Let it suffice that we congratulate them on their perspicacity in the choice of their hospital, and assure them of their welcome. To all of us, whether Freshmen or not, it is of interest to note that this year's entries have been restricted, nor is this on account of any falling off in the number of applications, but because we are requiring a gradually higher academic standard, and now accept only those who are taking an M.B. course. On this point it is a matter of rejoicing for all that we shall be turning out, on the whole, better qualified men, and at the same time shall have at our disposal more clinical material, relative to the number of students, than has been the case in the last year or two. It is for the interest of those who are just entering the Hospital that we append accounts of the activities of the various sporting and social organisations that form a part of Hospital life.

IT may be news to many people that a Clinical Society of Urology has been formed, consisting of twelve of the leading specialists in this subject in the country. It seems to us a matter of great moment that the first meeting since their inception is to be held at Guy's. We are informed by Mr. Thompson that this occasion will take place on October 24th. Among those taking part in the morning's meeting will be Dr. Symonds, Professor Johnston, and Mr. Evans. In the afternoon Mr. Thompson will operate. All Guy's men will be glad that the Hospital is able to help to give this Society a start and to provide a home for its first meeting.

ON Tuesday, October 8th, Sir Kingsley Wood presented the prizes and delivered an address at this year's opening of the Medical and Dental Schools. Sir Kingsley Wood was welcomed by the Treasurer of the Hospital, Mr. F. P. Whitbread, after which he delivered his address, which we hope to publish in a subsequent number. Sir Kingsley Wood was particularly well qualified for his task, in view of his official position as Minister of Health. This, as the Dean of the Medical School pointed out, was the first occasion on which the Minister of Health has addressed a medical school since vacating his position as Postmaster-General. His new position, together with his previous association with the Ministry of Health, and also with the Hospital (of which his brother was a member), rendered his visit doubly welcome. A list of the prize-winners is appended elsewhere.

SINCE writing in our last number of the inadequacy of the Children's Department and the great opportunity that now confronts us for its improvement, we have received a number of letters, not merely from students, but from members of the Senior and Junior Staff. Some of these we unavoidably hold over, but from those that we publish it will be seen that the attendance, including those cases which Dr. Gillespie has taken over from Dr. Cameron at our Children's O.P. Department is larger than that of any other teaching hospital in London, St. Thomas's Hospital not excepted. Further, that "the disorders we lament lie not only in the imagination" can be seen by the experience of our other correspondents, none of whom has had charge of more than three cases in the whole course of the appointment. We would welcome the experience in this respect of others who have passed through the wards, and hope that this will emphasise the very real necessity both for more beds and for some provision of methods for preventing cross-infection, other than closing the ward. With the imminence of the

opening of Nuffield House, it would be interesting to learn from those responsible for the Hospital improvements what are to be the ultimate fates of Bright Ward and the Children's Department.

WE published a letter in our last issue signed by twelve members of the Hospital on the question of the provision of a new Squash Court. This letter followed on our statement in "Passim" some weeks ago of the present position with regard to the enlargement of the Nurses' Home. We remarked that, although this enlargement encroached upon the old Fives Court (which it was proposed to convert) to the extent of a few feet only, this would necessitate its demolition, or would at any rate render it quite useless for play. We further expressed the hope that, in view of the fact that the necessary money for its conversion had long been granted by the generosity of the Catering Company, and also in view of the very much greater expense of building a new court and the lack of space elsewhere, some sort of architectural compromise would be arrived at. In spite of this we have heard nothing from the authorities on this point, but that there is much dissatisfaction with the present state of affairs can be seen from the letters appearing below from the captain and secretary of the Squash Racquets Club and from residents in the College. On this subject also we should welcome the views of our readers, as well as some information from the higher centres.

WE congratulate the Rugby Football team on their fine last-minute win against the United Services (Portsmouth) on Saturday, October 5th. Until the last few minutes it looked as though we would be defeated, against the run of the play, but our continued pressure was at last rewarded by three tries in quick succession, giving us a victory by 14 points to 5.

We are asked by the secretary to append the following notice regarding the application of tickets for International Matches :—

Applications for tickets for the International Matches at Twickenham between England and New Zealand on January 4th, 1936, and between England and Scotland on March 21st, 1936, should be made as early as possible to R. C. S. Dick, Guy's Hospital, S.E.1.

The closing date for applications for the All Blacks match is November 9th, 1935, and for the Scottish match January 18th, 1936.

The following tickets are available :—

1. For playing members of Guy's Rugby Football Club only. Players' ringside tickets (price 5*s.*); only one such ticket to be allotted to each player.

2. For the friends and relatives of playing members, non-players' ringside tickets, price 6*s.* Purchasers of such tickets are held responsible for seeing that they do not fall into the hands of speculators.

3. Available for any person, Stand tickets, price 10*s.*

It is important to note *that cheques or postal orders for required amount must be enclosed with application for tickets*, as otherwise the application cannot be sent to the Rugby Football Union.

WE remind our readers that the United Hospitals' Sailing Club Ball is to be held on Friday, October 25th, at Covent Garden. Tickets, which are 5*s.* each, can be obtained from the Hon. Secretary, K. G. Pascall, or other members of the Committee. An excellent cabaret, in which we understand there will be no Greek, Egyptian, basket or nativity dancing, has been arranged, and although all who went last year will undoubtedly be going again, we would ask for further support, as the upkeep of the United Hospitals' barge at Burnham-on-Crouch is to a large extent dependent on the profits of the Ball.

Medallists and Prizemen, 1934-35

MEDICAL SCHOOL

War Memorial Scholarship in Science (£200) *and the Open Junior Science Scholarship* (£100)—Arnold Bloom, A. R. Bradley, bracketed equal in both awards.

Confined Junior Science Scholarship (£100)—D. Tumrasvin, Hugh Wormald, bracketed equal.

Open Scholarship in Arts (£100)—H. F. Lunn.

Epsom Scholarship (entitling the holder to free Medical Education)—T. M. L. Price.

Junior Proficiency Prizes—J. J. Davis (£20), R. V. Coxon (£15), R. D. Blachford (£5) and A. J. Walker (£5), bracketed equal.

The Hilton Prize for Dissections—H. F. Lunn, prize; T. G. Pritchard, certificate.

The Michael Harris Prize for Anatomy (£10)—R. V. Coxon, Sydney Green, bracketed equal.

The Sands Cox Scholarship in Physiology (£45)—J. J. Davis, scholarship; R. D. Blachford, certificate.

University Entrance (British Universities) Scholarships—E. B. French, scholarship (entitling the holder to free Medical Education for three years); R. C. S. Dick, exhibition (£60).

The Treasurer's Medal and Prize for Clinical Medicine—P. W. Clarkson.

The Treasurer's Medal and Prize for Clinical Surgery—P. W. Clarkson.

The Golding-Bird Medal and Scholarship in Obstetrics and Gynæcology (£29)—H. R. S. Harley, medal and scholarship; J. M. Brown and H. M. Kelsey, certificates.

The Golding-Bird Medal and Scholarship in Bacteriology (£29)—E. W. O. Adkins, medal and scholarship; E. B. French and M. R. Woods, certificates.

The Beaney Prize for Pathology (£34)—E. B. French and Eric Sayle, bracketed equal.

The Leonard Lubbock Prize for Clinical Pathology (£10)—H. R. S. Harley, prize; C. S. Darke and Eric Sayle, certificates.

The Charles Oldham Prize in Ophthalmology (£30)—M. R. Kark.

The Charles Oldham Prize in the Neurological Aspects of Ophthalmology (£30)—Eric Sayle.

DENTAL SCHOOL

Open Junior Science Scholarship (£160)—E. K. Breakspear, W. L. Trick, bracketed equal.

Open War Memorial Scholarship in Arts (£160)—T. N. Praat.

Epsom Scholarship (entitling the holder to free Dental Education)—O. B. Balean.

Second Year's Prize in Dental Subjects (£15)—Paul Borghys, Frank McCombie, R. W. Marston, bracketed equal.

Prize in General Subjects for Dental Students (£10)—A. O. Chick, W. A. Steiner, bracketed equal.

Newland Pedley Medal and Prize for Operative Dentistry—N. A. Hawkins, medal and prize; N. L. Forrester, certificate.

Final Year's Prize in Dental Subjects (£10)—L. C. Bellsham-Revell and N. A. Siggers, prize, bracketed equal; J. L. Deuchar, certificate.

Obituary

MISS VICTORIA JONES

MISS VICTORIA ELIZABETH JONES, Matron of Guy's Hospital from 1882 to 1893, died on September 16th last at the great age of ninety-eight. She had a splendid record of service, and was interested in the Hospital almost to the end of her long life. Guy's people of past years may like to be reminded of some details of her career. She was the daughter of a Carmarthen solicitor, and was educated at home with her two sisters. When she was about thirty years of age, the Tractarian movement in connection with the slums of London began to interest her, and she joined a Sisterhood at Haggerston for a time. She soon realised, however, that her real vocation was for nursing, and shortly afterwards went to Charing Cross Hospital as a probationer. Having finished her training there, she was appointed Staff Nurse at St. Bartholomew's Hospital, after which she came to Guy's as a Ward Sister in 1880.

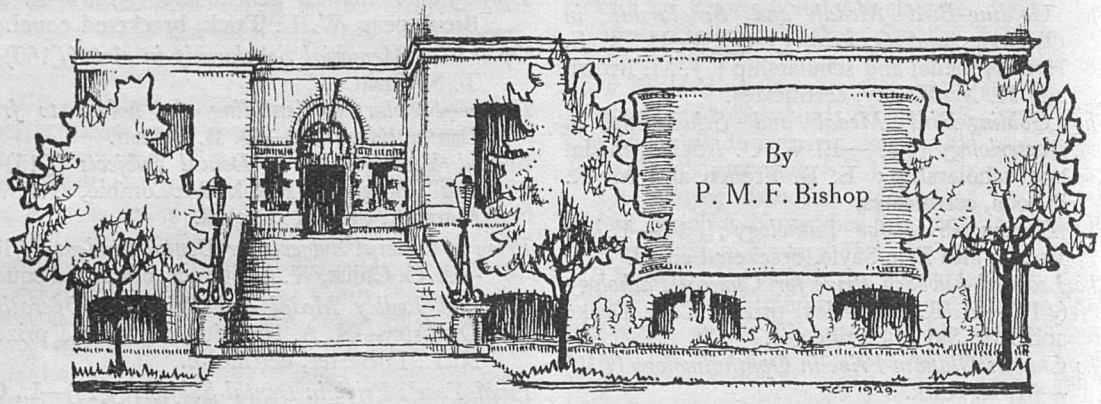
At this time Miss Burt was Matron, but two years later she resigned in order to be married, and Miss Victoria Jones was appointed to succeed her. All who can recall the eleven years of her Matronship will remember the conscientiousness and tact with which she carried out reforms and improvements which had been inaugurated by her predecessor, but which needed modification before they were generally acceptable. Under her quiet rule the Nursing Staff settled down happily to a new regime.

In 1892 it became necessary for Miss Jones to resign her post owing to the serious ill-health of her two sisters. After their death she settled down at Balham, and it was there that she died on September 16th, attended by her faithful maid, who had been with her since she left Guy's, and by Mrs. Manning, an old Guy's nurse and a life-long friend.

Until the last few months of her life her brain remained clear, and she liked to read and hear of everything that concerned the Hospital and the nursing profession as a whole. She became a Vice-President of the Guy's Hospital Nurses' League at the age of ninety-six! Those who knew her best can recall how wonderfully self-denying was her nature and how she expected the same characteristic in those who worked under her. She was gentle and appreciative of good work, but could be severe to those who did not give their best to the Hospital. She was not an originator, but she was a fine character to be remembered by all Guy's nurses, and we may be very proud of her life and work.

Flowers were sent to the funeral, and the Assistant Matron, Miss Mortimer, represented the Matron and present Staff of Guy's Hospital. A Memorial Service was also held in the Hospital Chapel on Sunday morning, September 22nd. Dr. Fawcett represented the Medical Staff, and several old friends of Miss Jones were present, including Miss Nott-Bower, the Matron who succeeded her, and Mrs. Edward Lushington, daughter-in-law of the Treasurer of that name. The service was cheerful and appropriate—a real thanksgiving for a long life well spent.

To Those Undertaking the Pre-Clinical Sciences



By
P. M. F. Bishop

THE first three years in the life of the medical student are generally supposed to be the dullest. This is because the subjects studied in the pre-clinical period are considered by many to be purely academic, and to have little bearing on the practical training of surgery, medicine or general practice.

Banish this idea completely from your mind when you enter the Medical School. It is true that you will have to work to a syllabus, and that the knowledge you acquire will be determined to a large extent by the requirements of those examinations which must be successfully negotiated before you can enter the wards, where at last you will be dealing with living and dying patients. But there is a reason for everything you will learn in your pre-clinical studies, and that reason is based fundamentally on the experiences of clinical medicine. The first action of many students when they pass the examinations in Anatomy and Physiology is to set fire to their notes and to try to get a decent secondhand price for their text-books. Then they feel they can start afresh on a new life, *the* life, the life of the wards. But though the Medical School is separated from the Medical and Surgical Wards by a spacious park of (sometimes) verdant green, they are much more intimately united as far as their activities are concerned.

Take, as an example, the three subjects organic chemistry, chemical physiology and clinical chemistry. These, you will find, are, in fact, so closely linked together that it has been found desirable for the Chemistry Department and the Chemical Physiology Laboratory to work very largely in conjunction with one another, while the methods taught in the course of chemical physiology are those which are used subsequently in the clinical chemistry which is practised in the wards.

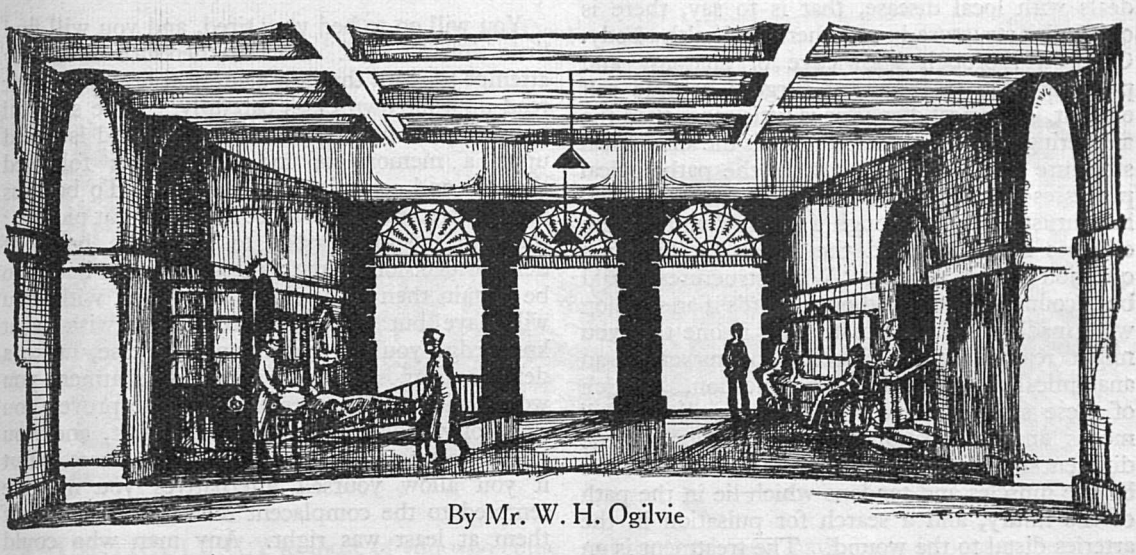
The pre-clinical sciences are designed as a careful preparation for the subsequent clinical work, and if this is fully realised a new interest will be awakened in biology, physics, chemistry, anatomy, physiology and pharmacology.

Most of you will have come to Guy's straight from school, and when you arrive you will be impressed with the relative freedom with which you are endowed. A record of attendances at lectures and practical classes is kept, mainly for the purpose of qualifying you for the examinations. You must realise, however, that these classes are designed to assist you in your work and not to compel you to work. Your life is in your own hands now. If you wish to take an intelligent interest in the manifold activities of the Medical School and of the life of the Hospital, you will be amply repaid. If you abuse the freedom which is given you by escaping from these activities, no one will miss you and no one will care very much. Medicine is a hard training for those who have no inherent interest in it, and the time to develop and cultivate that interest is as soon as you enter the Medical School.

Do not become one-sided. Remember that as a doctor you will come in contact with all kinds and classes of men and women, and you will be expected to take an intelligent part in conversation and to express a reasonable opinion on subjects not directly concerned with medicine. There is no one more boring and depressing than a doctor who has no outside interests, unless it is a group of doctors who can talk nothing but "shop" to each other.

Finally, pay particular attention to taking regular exercise. This not only brings you in contact with your fellow-students, but is essential from the point of view of your health. The Borough is not the most salubrious place to live or work in, and hospital life is strenuous. Try as far as possible to develop an immunity to disease while you are still in the Medical School, by keeping fit and in training.

To Those Entering the Surgical Wards



By Mr. W. H. Ogilvie

GUY'S HOSPITAL rightly enjoys a world-wide reputation as a medical school, which for generations has sent into all parts of the world doctors armed with practical knowledge and with the willingness and ability to take responsibility which a practical training implies. There are two special advantages of the teaching here—the great wealth of material which passes through the wards and Out-Patients' Department, and the responsibility which is given to every man from the very outset of his career. In each appointment he is not taught only, he is asked to carry out essential work for the Hospital and for his patients, and trusted to carry it out well. At the beginning and close of the clinical period stand two appointments which are peculiar to Guy's, Surgical Ward Clerk and Clinical, and both of them have this combination of responsibility and instruction.

It is on the surgical side of the Hospital that you who are now entering the wards will first encounter the practical side of the profession you have adopted as your life's work, and the human material with which that work is to be carried out. It is as well that it should be so, for here the issues are clearer. Later will come the study of prolonged and progressive disease, of those degenerations which follow upon misspent lives or have causes still unknown, of failures rich in scientific interest, but at present beyond your power to remedy. You will meet much that is depressing. But during your first three months in a surgical ward you will find yourself in one of the most cheerful places in the world, where hope is the keynote, and hard, active, useful work your daily occupation.

For you who have chosen aright, this time will stand out with ineffaceable clearness for the rest of your lives. What has gone before has not been without interest, but the interest was academic. It was like the long drilling on Salisbury Plain, which made the raw recruits into the material of Kitchener's Army. The crossing of the Channel took them from make-believe to real war, the actuality for which all the drill had been a preparation. The rehearsal was over, the curtain was up. And so, in a surgical appointment, you are suddenly in the midst of real life. You are confronted with accidents, sudden infections, grave calamities. In the main it may be said of the patients whom you will encounter, that they are healthy, normal, sane individuals, struck without warning by some sudden misfortune. You are present at this crisis in their lives, and it is in your power to help in fighting it. There is something to be done; and when it is done it is your privilege to see the rewards of victory—the quick recovery and the return of hope.

There is another advantage of starting your career on the surgical side. You are introduced

to disease in a comparatively simple form, and the knowledge of anatomy and physiology which is fresh in your mind enables you to grasp very much of what you encounter without the need of lectures or text-books. Very much of surgery deals with local disease, that is to say, there is one faulty structure in an otherwise healthy body. Given a thorough knowledge of anatomy and pathology the teachings of surgery become self evident. Surgical diagnosis is little more than the answering of two questions—what is the anatomical structure involved and what are the pathological processes that have caused the trouble? A man has thrust his arm through a window and a piece of glass has penetrated the forearm. The first question that faces you, "What structures would be encountered from without inwards if an incision were made in such a situation?" is one that you might reasonably be expected to answer in an anatomical paper. The second question, "Which of these structures has actually been divided?" means an investigation of the sensation of the different nerves, and the movements carried out by the muscles and tendons which lie in the path of the injury, and a search for pulsation in the arteries distal to the wound. The treatment is an exercise in anatomy and craftsmanship, very interesting, because the relations which have been memorised by force of will are not brought vividly before you under the bright light of the operating lamp. Your hardly-acquired knowledge makes you not only a sympathetic fellow-man, but one skilled to restore function and promise recovery to the patient.

During these three months you will work very hard, probably harder than you have ever done before, but it is all tremendous fun. Your primary duty to the Hospital is to keep a record of the cases under your care. This you will do as well as possible, both for your own sake and because on the accuracy and lucidity of your account will depend the value of the record in years to come should the same patient be readmitted or should a series of similar cases be investigated for statistical purposes. Besides clerking, however, you will be expected to help in every activity of the firm to which you are attached, from carrying patients to making tea in the dressers' room during "take-in." This appointment is your great opportunity for making yourself proficient. You should familiarise yourself with the somewhat elaborate routine of modern asepsis. You should take every opportunity to watch the dresser looking after your cases, for in the next appointment you will be a dresser yourself, and will be expected to know your work. It is the privilege of the beginner to ask questions, and this you should do in season and out of season. All knowledge which you acquire will stand you in good stead as a dresser, and as a dresser you will have more work to do yourself and less opportunity to learn by watching that of others.

You will go to bed very tired, and you will find little time to read. Do not therefore make any attempt to work through a surgical text-book, but read up your own cases carefully. True surgical knowledge is part of your own self, and is based upon a memory of individual cases followed through and committed to memory. To be thus remembered each case must be a clear-cut picture; therefore begin at once to form the habit of definite decision. At this stage it is far better to be certain than to be right. To begin with, you will have but little knowledge, but with what knowledge you have examine each case, make a definite diagnosis, and decide what treatment you would adopt. Whether the outcome proves you right or wrong, you will remember it, and you will have learned something in the process. But if you allow yourself alternatives you may be tempted to the complacent reflection that one of them at least was right. Any man who could remember all his mistakes would be the wisest surgeon in England at the age of 60.

Be interested in everything in your patients and your fellows; no less in the nursing which completes the cure than in the operation which initiates it. It is an old saying that the wise doctor treats the patient as well as the disease. Enter into human relationships with your patients. They will call you doctor and will hang upon your words, and there is much you can do to make them well besides ministering to their surgical wants. In this side of your work alone you will learn much that will help you to success in after life. At Guy's we are particularly fortunate in our patients. There is no foreign quarter in the Borough, no shifting population. British dockers, navvies, carters, factory hands and their wives and children, come into our wards to be made well. They are fine people and proud of living round the best hospital in England. Their happiness and our good name are in your hands.

Notice

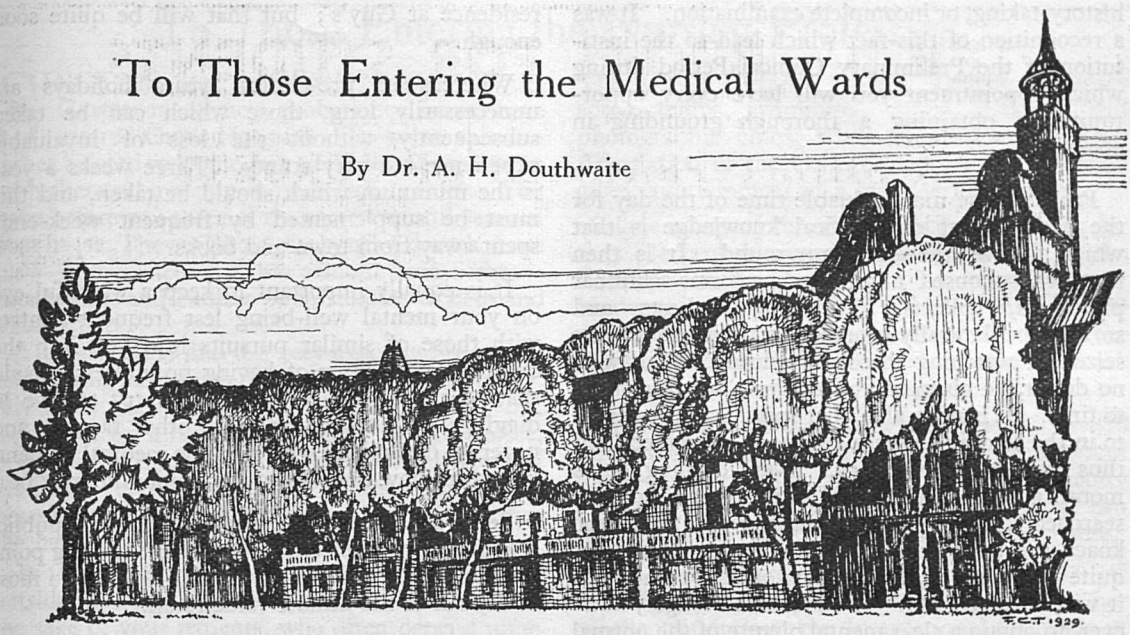
THE RESIDENTS' BALL

The Residents' Ball will be held at Grosvenor House on Friday, March 13th, 1936.

It is hoped that all old Guy's men will feel that they are very welcome and may obtain tickets on application to the Ball Secretary.

To Those Entering the Medical Wards

By Dr. A. H. Douthwaite



PARTICULARLY to those of you who come to us from other medical schools, the absence from Guy's of the formality, of the scholastic atmosphere, peculiar to so many hospitals will be very striking. No attempt is made to control your studies as by a schoolmaster. A high degree of freedom is allowed you in the knowledge that every opportunity and help is also offered to those who want to work. You are credited with the intelligence necessary to learn from textbooks, and, therefore, we do not give set courses of instruction by lecture in medicine. The aim at Guy's is to keep as much time free as possible for students to gain practical experience in the wards in order that they shall develop into self-reliant and efficient doctors. The wide capabilities of a Guy's man are recognised by the medical profession all over the world, and are directly attributable to the absence of " spoon-feeding " at this hospital.

It is not my purpose to preach to you of the necessity of hard work and devotion to Guy's. Presumably the majority of you have taken up medicine by inclination, in which case a few days of work amongst sick people will heighten your enthusiasm and provide you with such absorbing studies that no urge will be required.

To the few who are constitutionally tired, again advice will not be offered. No man has ever worked the harder in obedience to exhortation. It may even appear to you that you can drift through your life at Guy's with the minimum of effort. This is to an extent true, but these things are noticed, and have been known to lead to a pressing invitation to transfer allegiance to another hospital.

The abandonment of relatively exact sciences dealing with controllable substances and reactions for a life in the medical wards full of materials which, though superficially uniform in nature, actually differ completely by virtue of the unaccountable processes of human minds, not infrequently produces confusion combined with a fear that the earlier studies can be of little practical help. It is, however, precisely this human element which renders clinical medicine at once so fascinating and yet so difficult, for diagnosis usually rests mainly upon symptomatology, and to a less extent upon physical signs. Symptoms, however, have no fixed standard by which their severity can be assessed; their description is inevitably coloured by the personality of the patient.

The natural tendency to proceed to the examination of a patient without taking a careful history is, therefore, strenuously to be avoided. One should rather devote the greater part of one's time to listening to his story, and then, by careful questioning, sift the relevant from the irrelevant. In so doing, the true nature of the disease commonly reveals itself before ever a finger has been laid on the sufferer.

As a matter of course, a very careful physical overhaul should follow; nothing must be left to chance, which rarely favours its disciples. Nearly all diagnostic mistakes are referable to shoddy

history-taking, or incomplete examination. It was a recognition of this fact which lead to the institution of the Preliminary Clinical Period during which appointment you will have every opportunity of obtaining a thorough grounding in essentials.

Probably the most valuable time of the day for the acquirement of practical knowledge is that which follows the afternoon round. It is then that the house physician performs lumbar punctures, collects blood, taps chests and so forth. Naturally every opportunity should be seized of watching these procedures, which will, no doubt, be given to you to carry out from time to time. It is now, also, that special signs referred to in the teaching rounds can be re-examined, and thus fixed in the memory. Every evening, for a month at least, one pair of optic discs should be searched for with the ophthalmoscope. Once the knack has been acquired, and this usually comes quite suddenly after several days of disappointment, it will never be lost. It takes much longer, however, to obtain a clear mental picture of the normal as opposed to the diseased disc, and yet recognition of early change may be decisive in clinching a diagnosis, and possibly even in saving a life. It is for this reason that the daily study of retinæ should be made a fetish.

In addition to your work in the wards, you should attend post-mortem demonstrations whenever possible, and attempt constantly to correlate the morbid findings with the reported clinical signs. Nowhere are the many pitfalls which beset the path of the diagnostician so lucidly revealed as in the post-mortem room, where errors are ruthlessly exposed. In years to come you also will experience the epigastric discomfort which assails us on approaching the exposed remains of a case whose malady during life had seemed so simple of explanation.

As to reading, this should be limited to decsriptions of any disease which you may have witnessed on that day in the wards, whilst the rest of the evening should be devoted to pathology. A thorough grounding in this subject greatly simplifies the study of sick people and, by allowing of inductive reasoning, robs symptomatology of many of its difficulties.

Do not let your natural, or acquired, enthusiasm for work beguile you into the belief that by living near the Hospital you will absorb from the atmosphere a little extra learning. Far from it, you are much more likely to become a prey to disease induced by ill-ventilated, dark and dirty rooms. Eventually it may be necessary for you to take up residence at Guy's; but that will be quite soon enough.

Whereas in pre-clinical years holidays are unnecessarily long, those which can be taken subsequently without the loss of invaluable experience are very scanty. Three weeks a year is the minimum which should be taken, and this must be supplemented by frequent week-ends spent away from town and books.

It is equally important to keep a watchful eye on your mental well-being lest frequent contact with those of similar pursuits lead you into the deplorable condition of having no interest outside that of medicine. To avoid this try to live in diggings with a man in some other faculty, and never go on holiday with a fellow medical student, no matter how desirable a companion he may be.

Seize all opportunities of speaking in public. The Debating Society is an excellent starting point for the practice of an art which is difficult to most of us, but of the utmost value to all.

As a last word, I would draw your attention to the fact that at Guy's quite exceptional reliance will be placed upon you from the moment you take up the duties of ward clerk. Certain examinations are left entirely to you. The case reports are essentially your province. Failure to carry out the duties conscientiously may not only "let down" your house-physician and corresponding member of the visiting staff, but, also, even endanger the lives of patients for whom you share responsibility.

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The Editor will, at all times, be glad to consider articles or sketches, provided that they are accompanied by the writer's name and address, not necessarily for publication. Authors who desire reprints of their papers should make their own arrangements with the Printers when they return their proofs. All contributions to be addressed to *The Editor*, who does not accept responsibility for the views expressed by contributors

To Those Entering the Nursing Profession

SINCE the last Students' Number of the *Gazette* many new probationer nurses have entered Guy's Hospital. To some this is a rather belated welcome, but perhaps not too late to wish them all a happy and successful career. You have before you three of the most eventful years of your lives. They will hold plenty of hard work, some play—appreciated as it has seldom been before—excitement, and endless opportunities to help and serve others.

You will often find it a very exacting life. Few professions make such demands upon its members, physically, mentally and morally, as nursing; but if you possess a real love of caring for sick people, patience and understanding, you will find yourself gradually becoming equal to those demands. Nursing is extremely satisfying work. It satisfies the hands, the mind and the heart.

It is essential that you should maintain your outside interests both for your own sakes and for the sake of your patients, who often depend upon you for food for thought and entertainment. This is not as difficult as it sounds, for nowadays off-duty time is good and many facilities for sport and other kinds of recreation are provided in hospitals. The Guy's Hospital Nurses' League possesses active tennis, swimming, choral, debating and photographic clubs, while the Student Nurses' Association of the College of Nursing frequently gives entertainment of a more serious nature.

Have a regard for old-established customs, for they are probably carried out at the wish of the Founder of the Hospital. Tradition has not hindered progress at Guy's during the last 200 years. You have opportunities through the Nurses' Representative Council to leave the mark of your generation on the Hospital.

Above all, keep your sense of humour. It will carry you through many a difficult time; and there is no need to sacrifice your individuality providing you preserve a sense of fitness and can adapt yourself readily to a change of atmosphere.

As Sœur Pierre, Director of the School of Nursing, University of Louvain, said in her excellent address at the International Congress of Nurses in Paris: "A true nurse is a convinced optimist. This healthy optimism, which may often cause some surprise, is the expression of intense moral force and true peace of mind."

Guy's Hospital Chapel

THE Chapel at Guy's certainly does not thrust itself ostentatiously upon the notice of the newcomer, but it exists nevertheless. Those who boldly open the door under the clock in the front square will find it. It is embedded in Matron's House, which flanks it on either side and covers the roof as well. It is square, without an apse, and with galleries round three sides, being technically described, we believe, as a "drawing-room Chapel of the Georgian Period." An impression of a sort of apse, indeed, has been artificially and undesignedly created by the placing of an organ in one corner and a vestry in the other. This has the disadvantage of partially obscuring the design of the Colonnade, which was clearly intended to be a feature of the building. It is possible that these encroachments will be removed in the execution of a scheme of redecoration and improvement which is afoot. The stained glass windows commemorate William Hunt, the founder of the Medical Wards. The mosaics and panels are a memorial to all those who have died in the Medical Service of the Hospital since 1867.

Various others are recalled by brasses in various parts of the Chapel and in the Lobby. The most interesting of these are those of W. E. Gladstone, a Governor for 63 years, Sir Astley Cooper and Sir William Gull. But the best known feature of our little Chapel is the really noteworthy monument to our Founder, Thomas Guy, which faces the altar. Here is Guy in Court dress of the period relieving a suffering man, while in the background is to be seen an actual model of the Quadrangle and Colonnade Steps outside, with porters engaged in stretcher bearing. The inscription on the monument is well worth studying as a good example of the somewhat florid testimonials which characterised such literature in the eighteenth century, and as a record of certain facts apt to be forgotten.

An extensive crypt contains the Founder's tomb, for the remains of Thomas Guy were translated across the street from their original resting place beneath St. Thomas's, where they lay from 1725 to 1780. Among the other tombs in the crypt are those of William Hunt, Sir Astley Cooper and certain Governors, Surgeons and Physicians of bygone days. Of those who served the Chapel the greatest name is that of Frederick Denison Maurice, Chaplain 1836-46, portraits of whom will be found in the Lobby. A list of the services in the Chapel will also be found there, and the Chaplain is always glad to supply further information. Needless to say, the Chapel and its Services are always open to all members of the Hospital and Schools.

The Medical Curriculum

1. The Sciences

THE matriculated student will, in his first year, study Inorganic and Physical Chemistry, Physics and General Biology, and at the end of this period, provided he has worked diligently in the laboratories, and attended the Lectures and Revision classes regularly, should have no difficulty in passing the First Examination for Medical Degrees. In his second year he will study Organic Chemistry, together with Anatomy and Physiology, and at the end of the second winter, provided, as before, that he has worked steadily from the commencement, should have little difficulty in passing the First Part of the Second Examination for Medical Degrees. Anatomy, Physiology and Pharmacology are then taken as the Second Part of this Examination at the close of the third winter, prior to commencing Clinical work in the wards.

From Medical and Dental students who are preparing for the Pre-Medical Examination only six months' work is required, but those entering without previous knowledge of Chemistry and Physics will find that time hardly sufficient, and are usually advised to take the full "year" of three terms, or nine months.

The importance of practical work cannot be too greatly emphasised, and lectures and books can but supplement work done in the laboratory. Guy's men have no excuse for neglecting laboratory work. Students are strongly urged to form early the habit of spending their spare hours, apart from those officially allotted, in one or other of the laboratories. Reading should be left for the evening. After a day in the laboratory, reading a good text-book will be found to give ample scope for thought. "Cramming," or the memorising of words and phrases, without a knowledge of the corresponding realities, is one of the worst intellectual habits a student can acquire, and in the long run invariably leads to failure.

CHEMISTRY AND PHYSICS

The student is often tempted to regard the study of Chemistry and Physics as one of very little use when once his preliminary examination is passed, but he will find in his study of the sciences of Physiology, Pharmacology and Pathology that a proper understanding of Physical and Organic Chemistry and Physics is invaluable and essential. That this is so is now fully recognised in the London University curriculum, which should be carefully studied by every London student.

BIOLOGY

Biology, like all the sciences, is properly studied in the laboratory, because things seen are better understood and remembered than things read or heard. Animals and plants are the true sources of a knowledge of biology, and more correct than the text-books written about them. Acquire, therefore, the laboratory habit and record carefully what you observe. Use your books as reminders of the things seen. Draw much. It saves you from the habit of verbal memorising. The drawing of a diagram is the best way of testing the accuracy of one's knowledge in a descriptive science like biology. In the laboratory are also demonstrators whose duty it is to clear up your difficulties. Equip yourself with the necessary instruments. A microscope is needed at once. Its purchase requires care and advice. Students have been known to saddle themselves with an instrument that gives them unsatisfactory results for a whole year, and gets condemned in a later microscopical course. This is poor economy, as the difference in price between a good and poor microscope is small. If you are buying a secondhand instrument, bring it to the laboratory for examination by the demonstrators before you complete the purchase.

ANATOMY

Too much emphasis cannot be laid on the importance of the careful dissection of the human body as an aid to the student in learning the subject of Human Anatomy. The man who has not dissected the whole body with average care can never hope to acquire familiarity with the subject, and experience shows that the man who neglects or "scamps" his dissections—and incidentally endeavours to make up the lost ground by dint of hard reading—has infinitely more difficulty in satisfying the examiners than the man who has completed his dissections conscientiously, even though he may have given much less time to his reading than he might have done. This is, it is true, the sordid examination point of view, but it is, nevertheless, not to be lost to sight.

It is unfortunate that limitations of time and other cogent reasons demand that the student should commence his dissections at the same time as he receives the introductory lectures on anatomy, an arrangement which increases his initial difficulties in the dissecting room. At the very outset

he will find himself faced with a mass of facts in which there seems to be neither rhyme nor reason. After a little, however, the fog by which he has been enveloped will begin to lift, and, gradually, he will come to appreciate that what at first appeared to be a chaotic collection of structures, endowed with unintelligible and apparently meaningless names, resolves itself into a reasonable and orderly arrangement of structures, whose names are, for the most part, peculiarly appropriate. There is a danger lest, at this stage, when he is beginning to see daylight, he should occupy too much of his time with the names which must necessarily be given to individual structures. The names themselves have, of course, no intrinsic value, and are merely used to facilitate description. Attention should be devoted instead to discovering the functions of the structures displayed by dissection and to observing the relationship which exists between function and structure. Throughout his whole period in the dissecting-room the student should seek to correlate his Anatomy and his Physiology. If he does so he will find that he is simplifying the task in hand, for the one subject will help him with the other.

It is important, too, to appreciate that while the cadaver is being dissected the topographical information acquired by this means can be applied to the living subject. Most of the superficial structures and many of the deeper ones can be recognised either by the eye or by the hand in the living body, and the student should learn to identify on his own person, so far as is practicable, the various bony points, muscles, tendons, etc., which can be seen or felt. He should also endeavour to visualise on himself the position of the deeper structures which present no surface landmarks. After all, when he enters the wards, and in after life, he will have to deal for the most part with living patients, and, apart from actual surgical operations, he will be compelled to visualise on their bodies the position of the structures which he has dissected in the cadaver. The correlation between the dissected subject and the living body is difficult only when it is regarded as a separate section of human anatomy to be learnt from books, after all the dissections have been completed and in the last few days before the professional examination. The student, therefore, must constantly strive to form mental pictures of the regions as he dissects them, and to project these pictures on to his own body.

Once he has obtained a reasonable knowledge of the general anatomy of the body, the student who possesses any imagination will find Human Embryology a fascinating subject. Here he will find the explanation of much that may have hitherto appeared to be inexplicable, and here, too, he will see modifications of function and structure proceeding side by side.

The Guy's student is fortunate in having a modern and well-equipped department in which to work. In addition to the material which is always available in the dissecting-room and in the specimen rooms, the famous Towne collection of wax models, which is housed in the Anatomical bay of the Gordon Museum, can and ought to be utilised freely for study and for reference.

PHYSIOLOGY

Before the student can hope to appreciate the abnormalities and disturbances of function which form the material for his clinical studies, a sound knowledge of the normal function of the body is essential. Physiology is the science which supplies this basic knowledge and the student who obtains a firm grounding in this subject reaps his reward.

Physiology is a science which is entirely based upon the triad of experiment, observation and deduction. For this reason its study is of inestimable value for the training of the mind in the powers of logical reasoning. The major part of the course consists of experimental work in which the student is able to see for himself and draw his own conclusions; this makes the subject extremely interesting, and relieves the student from a heavy burden of hard facts which can only be retained by a feat of memory.

The practical classes are divided into three groups. In the experimental class the student records and measures the activities of living tissue from frog and mammal. In the chemical class he studies the composition and reactions of biological material. In the human class he makes observations upon the human subject. In all classes stress is laid on those aspects of his work which have a direct bearing on his future studies, so that he should carry into the wards a knowledge of the more important biological processes.

As a guide to the student in his studies a course of lectures is given each year; this serves, not so much as a source of actual information, as a means of correlating and balancing the student's knowledge. Observations, which may be quite dissociated in the student's mind, can be brought together—woven into a complete whole. In addition, clinical demonstrations are given to the senior students each week, and these serve as an introduction to the application of physiological principles in the study of the disturbances associated with disease.

The student is advised to commence his reading of Physiology with an introductory book such as

Winton and Bayliss's " Human Physiology," The choice of text-books is large, but Halliburton's " Handbook of Physiology " or Starling's " Principles of Human Physiology " should satisfy his needs. There is a small library in the Physiological Department, and students may borrow works on special subjects.

PHARMACOLOGY

Pharmacology is the study of the action of medicinal substances on the normal body. It is the basis of all methods of chemical treatment and forms an important natural scientific link between physiology and practical medicine.

A preliminary knowledge of physiology is essential. The student is introduced to the subject before his clinical period, but cannot realise its full significance until he has come face to face with the actual problems of therapeutics in the wards. A short revisional study at this stage of his curriculum is strongly recommended.

A six months' course of bi-weekly lectures and demonstrations is given during the two winter sessions, and should be attended by all students. Revision classes are provided for each of the four examinations of the Conjoint Board yearly. Candidates for the B.M. (Oxford) must also attend the practical classes which commence in January.

Lectures.—On Mondays, 4 p.m., Fridays, 1.15 p.m., in Physiology Theatre, commencing Friday, October 7th.

Demonstrations.—Details to be announced later. In Pharmacology Laboratory. Dates to be announced during lectures.

Revision Classes (Conjoint).—To be held in November in Pharmacology Laboratory. Dates to be announced later.

Text-books.—Dixon's " Manual of Pharmacology " is the most suitable text-book for general use. Gunn's " Introduction to Pharmacology and Therapeutics " summarises the subject in a readable way and is invaluable for revision purposes. The practical classes are based on Sollmann and Hanzlik's " Experimental Pharmacology," but Dixon's " Practical Pharmacology " is sufficient as a short laboratory guide.

A comprehensive Departmental Library is available for those more deeply interested in the subject.

2. Pre-Clinical Period

THE extension by the Examining Bodies of the student's curriculum of study has allowed the addition of an extra period of three months' preliminary instruction before the student actually embarks on his duties in the wards.

It has long been felt that the time allotted to the study of Medicine, in the limited sense, has of late years been encroached upon and curtailed by his duties in the Surgical Wards and the Special Departments, and the opportunity was gladly seized of redressing the balance by giving him extra tuition in medical subjects.

The object of the Pre-Clinical Period is to instruct the student in the routine methods of examination of patients and in the detection and interpretation of physical signs, so that on his entry into the Medical Wards he will be able immediately to derive full benefit from the teaching of the Registrars and Physicians without the laborious explanations and tedious insistence on elementary points necessary before the introduction of the scheme.

In addition to this instruction, which he receives from the Clinical Tutor in charge of the course, the student gets a course of Clinical Chemistry from Dr. Ryffel and Dr. Waterfield, Elementary Pathology, Minor Surgery and Bandaging from the Surgical Registrars, and instruction in the methods of examining the eyes, ears, nose, etc., from the heads of the departments concerned.

3. The Wards

SURGICAL WARDS

THE appointment of surgical ward clerk is the first of the appointments held by the student during his Clinical training. In many ways it is the best of all the appointments, as most of the teaching, both by the Surgeon and the Registrar, is for his special benefit. Furthermore, a reputation for keenness and ability earned in those early days will follow him and help him throughout the rest of his time at the hospital. Each clerk is attached to one of the surgical units for three months, and it is his duty to record the history and progress of the cases allotted to him.

The wards are open to the student at 10 o'clock, and he should have written up the history of the case and, as far as possible, have examined the patient before the Registrar of the unit begins his round at 10.30, when each case is discussed and the report of the clerk confirmed or amplified. The student during this period will do well to

confine most of his attention to the detection of the physical signs, and should procure from the Medical School Office a copy of the red book entitled *Instructions in Case-Taking, Surgical*, which he will find a very good guide to sound and systematic examination of the patients.

While he is acting as ward clerk the student attends a course in Elementary Pathology and Pharmacology, and at the same time has unrivalled opportunities of seeing dressing and operations, more especially during his "take-in" week. There will be much hard work, and many late hours, but there will be also incalculable compensation in seeing and learning the practical points that will stand him in good stead. He is doing his own work of ward clerk, but must remember that he is learning also to be a dresser.

As a dresser the student spends two periods of three months. While the surgical work is very dependent on the dresser for its smooth efficiency and good results, the dresser must realise that he himself is very dependent upon his work, for it is during these six months that he lays the foundation of his surgical knowledge and sound after-care. Someone has said that every surgeon should be his own dresser, so that the dresser must appreciate the responsibilities that he assumes in thus deputising for his surgeon.

We have said very little about the actual tasks of the dresser; he should read the "standing orders" relative to his appointment, and from then on everything depends upon himself. He has been given a valuable appointment and one difficult to do well, but one that repays hard work almost more than any other appointment he can hold.

MEDICAL WARDS

To each medical ward clerk is allotted a certain number of beds, and he is expected to examine and write full reports on all patients who are admitted into these. Occasionally, it so happens that a patient is too ill to be examined except by the House-Physician and Physician, or that a case dies before the ward clerk has had an opportunity of seeing it. Under these circumstances he should obtain the history and an account of the symptoms, physical signs and progress of the case from the House-Physician, and should base his report on these data. It cannot be too strongly insisted that a report, however brief, must be written on every case, and it is of the greatest importance that *the diagnosis and remarks made by the Physician should be entered at once into the report*. Moreover, any errors detected by the Physician or Registrar in the original report should be immediately corrected. In the event of a patient dying, the ward clerk must obtain the abstract of the post-mortem findings and carefully enter it up, and it need hardly be said that all clerks should make every effort to see the post-mortem examination of any case they may have seen during life.

The medical wards are open to clerks from 10 till 12 noon, and from 1.30 till 6.30 in the evening. The Registrars begin their rounds at 10.30, and by that time a clerk should at least have full notes of the history of any new patient who may have been admitted into one of his beds, and he should have a full report in readiness for the Physician in the afternoon. Ward clerks should realise that they are expected to know the details not only of their own cases, but of every patient under their Physician. It is no excuse to plead ignorance because "this is not my case." If a clerk will only take the trouble to make himself conversant with each case in this way he will find at the end of his six months that an enormous amount of clinical material has passed through his hands, and he will probably have acquired enough knowledge of medicine to enable him to pass the Conjoint Final with but little additional reading. But so many men waste their time through sheer laziness in the medical wards, never realising that they are throwing away experience which would prove invaluable to them later on.

Again, the curriculum provides but six months for the study of pure medicine, whereas nine months are allowed for the pursuit of surgical appointments. Further, during their period of medical clerkship men are apt to take more time than is justified for the study of Pathology and Bacteriology, which they have neglected whilst in the Surgical Wards.

An hour spent in the wards after tea three or four times a week will give opportunities not only for going over cases and writing up reports, but also for seeing the House-Physician tap chests and abdomens, etc. The treatment, too, which each case is receiving, may well be studied at this time.

As regards reading, the best method is to study the text-book account of each disease as one comes across it in the wards or in discussion, and afterwards to compare, if possible, the text-book description with the symptoms and signs presented by the patients. At the same time the most important medical journals should be read regularly, for by this means only can the student keep himself in touch with modern work. The *B.M.J.* and the *Lancet*, the *Quarterly Journal of Medicine*, as well as the *Journal of the American Medical Association*, are especially recommended.

Books that may be recommended are the following: The well-known text-book by Osler, Dr.

Poulton's revised edition of Taylor, Dr. Conybeare's *Text-book of Medicine*, and *Physical Diagnosis* by Cabot. For second three months ward clerks, the most important monographs in Allbutt's or Osler's *System of Medicine* will prove valuable and interesting reading. For laboratory work Hutchinson and Rainey's *Clinical Methods*, or Dr. French's book will be useful.

OBSTETRIC & GYNÆCOLOGICAL WARDS

After finishing appointments in the Medical and Surgical wards the student is posted to the Obstetric Department for six months. During the latter half of this time he is also attached to the Physician for the Diseases of Children. The Obstetric Dresser is responsible for case-taking in the wards and at Out-Patients, assists at operations, and during one month acts as Extern in the Maternity Charity. The Department has 26 beds reserved for gynæcological cases and 21 for the reception of cases presenting complications in pregnancy, labour and the puerperium and normal labours.

As an intervening link between the Obstetric and Children's Departments is the Salomons Centre, in which the health of mothers and infants is fostered by the practice of preventive medicine.

With this wealth of clinical material it should be possible for every student to obtain a sound knowledge of methods of diagnosis and treatment founded on no small experience. It is, however, recognised by teachers of Gynæcology and Obstetrics that this desideratum is not always attained. It is undoubtedly true that many a young practitioner has to admit a regrettable ignorance of the ailments which afflict his female patients and of the proper management of the pregnant, parturient and lactating woman. And these subjects form the foundation upon which a successful family practice is built. Responsibility for this sad state of affairs hardly rests with the student, but he will do well if he starts his clinical work with the firm determination to avoid the pitfalls that beset his feet. He must realise that practical experience in diseases peculiar to women cannot be acquired in the space of the three months which he will spend in Queen Ward. As he passes from one appointment to another he must resist the tendency to develop the compartmental mind and must endeavour to cultivate a wide outlook on medicine as a whole.

The study of the physiology and pathology of the functions of woman should be begun at the outset and continued throughout the period of clinical training. The man starting as Surgical Ward Clerk should include among his initial purchases a text-book on Gynæcology, for purposes of reference, and should make a point of attending the lectures of the Obstetric Surgeons. He should also avoid no opportunity of acquiring the " tactus eruditus " so essential to the accurate diagnosis of pelvic disorders ; the inherent impossibility of permitting a class of students to examine women patients one after the other renders it imperative that this experience be gained over a considerable period of time.

The study of midwifery he may well leave until he becomes an Obstetric Dresser ; the art of the accoucheur cannot be learnt from books.

4. Pathology and Bacteriology

PATHOLOGY

WHEN the student has passed the Second Conjoint or M.B. Examination, he is halfway through his medical curriculum, and he should have gained a working knowledge of the functions of the body in health. This knowledge is an essential preliminary to the study of the most important of the medical sciences, viz., Pathology, or the study of the functions of the body in disease. Throughout his life the student, if he continues to study and practise medicine, must ever keep pathology in the foreground. It is desirable, therefore, that the study of pathology be begun as soon as possible and continued throughout a medical career.

The subject is an exceedingly large one, and it is customary to divide it into several sections :—

1. General and Special Pathology ;
2. Morbid Anatomy ;
3. Morbid Histology ;
4. Bacteriology ;
5. Chemical Pathology.

Due attention must be paid to each of these branches in proportion to their importance relatively to one another and to clinical medicine and surgery as a whole.

During the pre-clinical period the student must attend classes and demonstrations in elementary pathology, bacteriology and chemical pathology.

During the Autumn, Spring and Summer Terms, systematic lectures and demonstrations in pathology and bacteriology are given. Three lectures and three practical classes are held weekly, the former at 9 a.m. and the latter at 12 noon.

Regular attendance at these classes is imperative, and the attractions of the wards and of clinical work should on no account be allowed to interfere with laboratory studies.

While medical ward clerks, during their tenure of office, should attend classes on chemical pathology, it is essential that throughout all ward appointments no opportunity should be missed of continuing the study of pathology.

Apart from set lectures and classes, students and house-officers are cordially invited to make use of the resources and facilities provided by the laboratories in order to add to their knowledge of a subject that lies at the root of all successful clinical work.

Every man should, as far as is practicable, follow out the pathology of each and every one of his cases.

Is a bacteriological investigation to be made? He should follow it out as far as possible. Is a portion of tissue removed for microscopical examination? He should see and examine the section. Is a chemical examination demanded? He should endeavour to see the analysis carried out. He should never miss an autopsy on any one of his cases, and should make a point of keeping a special note-book in which he can enter the clinical history and progress of a case, the post-mortem findings if the case comes to autopsy, and the result of the histological examination together with a general review of the case in the light of that further evidence.

Set hours cannot be given for these lines of study; they must be fitted in as time and opportunity permit. In short, efforts should be made to see as much practical work and as many demonstrations in pathology as can be arranged. There are few days when no pathology can be learned. Post-mortems are held every day at 1.30 p.m., except on Wednesdays and Saturdays, when the hours are 12.30 p.m. and 11.30 a.m. respectively. Attendance at these will amply repay the time expended.

Informal classes in Pathology are held twice weekly during the October and May terms. These, though primarily intended for M.B. students, are suitable for, and should be attended by, those sitting for Part I of the M.B.Cantab. and the Final M.B. of Oxford or London University.

During the later clinical appointments certain students may hold a few pathological posts, such as Student Demonstrator in Pathology or Student Assistant in the Bacteriological Department. One or more of these may be held in turn, and they prove exceedingly valuable from the learners' point of view

There are many books which might be recommended, and what suits one student may not prove attractive to another. The following, however, will prove adequate for all the students' purposes: in Pathology, Boyd's Textbooks or MacCallum's or Muir's Manuals; in Morbid Histology, Donaldson's Handbook; in Clinical Pathology, Panton and Marrack; and for Bacteriology either Muir and Ritchie's Manual, Whitby's "Medical Bacteriology," or Bigger's Handbook.

BACTERIOLOGY

Bacteriology, although for a time regarded by the clinician as affording information of merely academic interest, has now made a most profound impression upon the theory and practice of both medicine and surgery, and by providing specific treatment for many microbial infections has emphasised the necessity and stimulated the demand for exact diagnosis, and it is towards this direction that the student's interest is guided by the class in Practical Bacteriology.

Particular attention is devoted from the beginning to the technique of various investigations undertaken in connection with ward work. Thus the student himself examines sputum, pus and morbid exudates by various methods to demonstrate the associated bacteria. He is instructed in staining methods and the practical work of culture making, and is, moreover, encouraged to repeat for himself during the intervals between successive classes any observations and experiments previously carried out, in order to equip him for the performance in general practice of those more obvious methods of bacteriological diagnosis which experience has shown are both reliable and valuable. Demonstrations are also given upon the life history of the most important of the organisms which are pathogenic to the human race, and by the study of "pure cultures" an attempt is made to impress the chief characteristics of each upon the mind of the student, whilst the changes such organisms undergo or produce when they gain entrance to the human tissues are carefully emphasised.

Throughout the course considerable stress is laid on the further applications of bacteriology to treatment, including the use of various remedial agents such as sera and vaccines, which have been elaborated in the bacteriological laboratory for the treatment of disease, together with those facts and theories relating to natural and acquired immunity upon which bacteriological therapy is based.

5. The Special Departments

THE CHILDREN'S DEPARTMENT

In-Patient Accommodation.—Dr. Cameron has under his care 13 cots in the Children's Ward. On two days in the week, at present on Tuesdays and Thursdays at 2 p.m., Dr. Cameron goes round the ward and gives clinical instruction. Afternoon rounds are also conducted by Dr. Hampson.

Out-Patient Department.—Children under 10 years of age are seen in the Children's Department at Out-Patients on Mondays, Wednesdays and Fridays from 9.30 until 1 o'clock. Dr. Cameron attends on Mondays at 10 a.m., and Dr. Hampson on Wednesdays and Fridays at 10 a.m., when clinical instruction is given.

The Salomons Centre is for the care of the mothers and children of the Midwifery Charity; attendances at the Centre are made by dressers in the Obstetric Department.

OTO-RHINO-LARYNGOLOGICAL DEPARTMENT

This Department is organised on the unit system. There are two units, one under the care of Mr. Mollison, the other of Mr. Layton, and Mr. Cann is the Assistant Surgeon. Patients are seen in the Out-Patient Department, admitted when necessary to the special wards, Dorcas and Christopher, and returned to the Out-Patient Department. This arrangement allows members of each unit to follow up the cases. Mr. Mollison's firm sees out-patients on Tuesdays and Fridays at 11.30 a.m., Mr. Layton's on Mondays at 9 a.m., and Thursdays at 11.30 a.m.

Dressers are appointed to the respective firms, and have every opportunity of becoming expert in the technique of examination of the ear, nose and throat, and of gaining experience in diagnosis and treatment. Large numbers of school children are seen. Minor operations are performed in the Out-Patient Department; these include, amongst others, operation for the removal of nasal and aural polypi, and of tonsils and adenoids, and for the lavage of the maxillary antrum; these operations are performed under the supervision of the Surgeon or the Clinical Assistant

Twenty-seven beds and six cots are now allotted to the Department, and each firm operates twice a week. Mr. Mollison and Mr. Layton "take-in" during alternate weeks, and emergencies are admitted under the care of the firm on duty.

THE OPHTHALMIC DEPARTMENT

The Ophthalmic Department of the Hospital is in charge of the two Ophthalmic Surgeons, Mr. Morgan and Mr. Law. They are helped by three Assistants, one House Surgeon and Dressers. The Dressers are appointed four times a year for a period of three months, and assist the Surgeons at Out-Patients and at operations, and are responsible for the recording of the cases both in the wards and at Out-Patients. The Ophthalmic Department is an open field for any student to explore as far as he is willing and able, the amount of clinical work being sufficiently great for him to see all the more ordinary and common diseases of the eye in the space of three months.

The student will soon find that he is quite unable to form any opinion of his own on an ophthalmic case until he has mastered the use of the ophthalmoscope and can readily and accurately decide what is the refraction of the eye, and if the "fundus oculi" is healthy and normal. The theory of retinoscopy can be taught and is simple; the practice, however, requires constant application by the student before he can hope to obtain any sort of facility in it. The difficulties are mainly initial ones, and any time and trouble expended in mastering them will well repay any man in after life when he has qualified and is in practice.

MEDICO-NEUROLOGICAL CLINIC

Advanced Ward Teaching for Post-Graduates and Students is given on Tuesdays at 2.15 p.m.; Drs. Hurst, Marshall, Symonds and Gillespie meet in Mary Ward for the combined round at which a discussion is held on a series of cases.

NEUROLOGICAL DEPARTMENT

This Department is under the direction of Dr. C. P. Symonds and now provides facilities for a full three months clerkship, which offers excellent opportunities to those who desire practical experience in one of the most difficult branches of medicine. Tuesday and Friday mornings are devoted to Out-Patient work; Dr. Symonds holds a teaching round on Thursday mornings in the Eye Ward, while the Registrar goes round on Wednesdays.

DEPARTMENT OF PSYCHOLOGICAL MEDICINE

This is now separated from the Neurological Department and provides a full three months course of Clinical tuition. In addition to Lectures and Clinical Demonstrations held at a mental hospital during the summer term, Dr. R. D. Gillespie is also responsible for a series of addresses on Normal Psychology during the spring session. Out-patients are seen on Tuesday and Friday mornings.

THE DERMATOLOGICAL DEPARTMENT

Out-Patient Days.—Dr. Barber: Mondays, New Cases, 9 a.m. Old Cases, 9.30 a.m.

Dr. Forman: Wednesdays, New Cases, 9 a.m.

Dr. Barber: Thursdays, New Cases, 9 a.m.; Old Cases, 9.30 a.m.

Wards.—There are three male and three female beds in the Eye Wards for Dermatological cases requiring careful supervision or treatment in bed.

Instruction in the diagnosis and treatment of diseases of the skin is given in the Out-Patient Department, and clinical demonstrations on selected cases are held from time to time.

THE GENITO-URINARY AND ORTHOPÆDIC DEPARTMENTS

These two appointments are now taken separately, but have a common House Surgeon. Students acting as Dressers in the Genito-Urinary Department have excellent opportunities of acquiring knowledge which will be useful to them in actual practice and examinations.

The Genito-Urinary Department is under the care of Mr. Thompson, who sees patients on Tuesdays and Fridays at 1.30. A large variety of cases can be seen. The in-patient beds are for the most part devoted to patients requiring severe operations.

There are 7 male in-patient beds in Christopher, 2 female beds in Queen, and 1 cot in Evelyn.

Students should realise that their attendance at this Out-Patient Department is very necessary, as is evidenced by the very advanced state of disease in which some patients arrive for examination.

The Orthopædic Department comprises a large out-patient clinic and a number of beds devoted to patients suffering from deformity. Out-patients are seen on Monday and Thursday afternoons, and Minor Operations performed on Wednesday afternoon, and in the Out-Patient Department the student will meet with every variety of deformity, congenital and acquired. Considerable facilities are afforded for experience in the relief and cure of all chronic diseases of bones, joints, muscles, etc. Instruction in the principles and most modern practice in the use of appliances, plaster technique, and the more useful forms of Physio-Therapy is given by Mr. Lambrinudi and Mr. Stamm, the Orthopædic Surgeons, and the Registrar. Numerous operations of a minor nature are done, such as manipulations for stiff and painful joints, correction of misshapen and rickety limbs, correction of scoliosis and immobilisation of tuberculous joints.

The in-patient beds are devoted to the most serious operative cases, such as extensive tendon transplantations, correction of malunited fractures, bone-grafting, the making of new joints, etc. Guy's is a pioneer hospital in possessing an excellent workshop for the manufacture of every form of splint and appliance.

It is in the Orthopædic Department that the principles underlying the mechanical disabilities of the limbs and spine are emphasised and their explanation made clear, and the experience to be gained here is invaluable. The great utility of orthopædic surgery has become evident to very many during the war.

THE TUBERCULOSIS DEPARTMENT

The Tuberculosis Department is a reference Department for out-patients suffering from diseases of the chest. Patients attend on two days a week, Thursday afternoons and Monday evenings. For suitable cases arrangements are made for admission to sanatoria. The patients return to the Out-Patient Department after leaving the sanatorium. The Department provides extensive opportunities for studying methods of investigating early and doubtful cases of pulmonary tuberculosis, also for observing special forms of treatment such as artificial pneumo-thorax. A special appointment is now connected with this Department.

THE DEPARTMENT FOR VENEREAL DISEASES

This Department is open from 9 a.m. to 8 p.m. on all week-days, and from 10 to 12 noon on Bank Holidays.

Treatment is carried out for all venereal diseases in women, men and children, and patients may be referred from other departments at any of these times.

Students may attend the male section any evening from 5 p.m. to 7 p.m., and Dressers in the Gynæcological Department may attend the female section on Mondays from 5 p.m. to 7 p.m. or Wednesdays from 2 p.m. to 5 p.m.

Demonstrations are held on Thursdays at 5 p.m. in the Demonstration Theatre in this Department.

Dressers are appointed to the Department every three months.

PRACTICAL PHARMACY AND DISPENSING

One of the many important things all medical students must know is how to write a prescription. It may even be necessary for the majority, when qualified, to be able to dispense the same. All students, therefore, would be well advised to acquire as much knowledge of the subject as they can.

The student is taught, practically, how to dispense the different medicinal preparations; he learns to write prescriptions, due regard being paid to doses and incompatibilities.

The course is conducted by the Hospital Pharmacist.

THE MASSAGE DEPARTMENT

Massage as a training for women has been taught in England since 1888. Guy's Hospital opened as a Training School for non-resident women in 1913, and is the largest school in the British Isles.

The training extends over a period of 21 months and covers a very comprehensive course in Anatomy, Physiology, Theory of Movement, and Applied Treatments by Massage and Medical Gymnastics for most Surgical and Medical conditions.

Applicants desirous of entering for the course must produce satisfactory evidence as to conduct, character and education, with a minimum age of 18½ years. There are two terms of entry each year, one in March and one in September.

On completion of the training the students enter for an examination arranged by the Chartered Society of Massage and Medical Gymnastics. This body has a membership of over 8,000 on its register. It provides for a Register which is available to the medical profession, and ensures an adequate supply of qualified workers.

The Department.—Patients are given daily treatments during the hours of 1.45 and 4.30 p.m. on Monday, Tuesday, Thursday and Friday, and 9 a.m. and 12 mid-day on Wednesday and Saturday. It is during these hours that visits by the Medical Staff and students are invited. The after-care of those patients who are given treatment is of interest to all medical men. And during the years students are in the wards much can be learnt as to the methods of finally restoring normal function in their patients.

Students interested in this branch of the profession should see the Sister-in-Charge and arrange to see their patients treated.

ELECTRICAL AND ACTINO-THERAPEUTIC DEPARTMENT

The treatments carried out in this Department include the following: diathermy, high frequency, the application of the constant, faradic and sinusoidal currents, radiant heat, and static electricity, treatment by the Finsen and mercury vapour lamps and radiotherapy.

A special Department has, for some time, been opened for artificial sunlight treatment.

A large number of cases are treated in the Department: Chronic joint conditions, nerve injuries, wasted muscles, skin diseases such as ringworm, psoriasis, eczema and rodent ulcer. There are also a large number of cases of malignant disease undergoing treatment with X-rays and radium.

6. Books

ADVICE on this matter is extremely difficult to give, for individual needs are almost as varied as the length of individual pockets, and the adornment of a virgin bookshelf is bound to depend on both these factors. Except in the case of certain essentials for routine work, such as the dissecting room manuals, it is perhaps better to postpone the inevitable visit to the bookseller and first to consult the various tutors and demonstrators in the subjects concerned. They will be more than willing to extend any suggestions made under various headings in this issue of the *Gazette*, and their experience will enable them to advise that blend of old and new best fitted to the individual case.

The rapid advance in medical knowledge unfortunately renders the second-hand book almost worthless except in the case of Anatomy, where the advances, though many and real, are not apt to be so revolutionary as in Physiology and Medicine itself. A Physiological text-book probably becomes out of date in less than a year, a text-book of Medicine in two or three years at least, so that in these subjects at any rate recent editions are essential.

All that is most distinctive in current Guy's teaching is to be found in the *Guy's Hospital Reports*, which contains articles written for the most part by members of the Hospital Staff. The unqualified man has the special privilege of

purchase at a much reduced price, an advantage that he will be wise not to neglect.

A great number of publishers are responsible for medical books, and a just estimation of the rival claims for their various productions is quite beyond the scope of this article. Mr. Humphrey Milford at the Oxford University Press offers a wide range of medical works of uniform excellence in subject matter, binding and printing. Messrs. Churchill publish Taylor's "Medicine," edited by Dr. Poulton, Romanis and Mitchiner, the *Recent Advances Series*, and many other well-known works. E. & S. Livingstone, of Edinburgh, present books containing the valuable teaching that emanates from both sides of the Tweed. Baillière, Tindall & Cox are responsible for the large Rose and Carless and a small synopsis series in their well-known *Aids*. Many splendid books are published by A. & C. Black, Cassell & Co., Longmans, Green & Co., Edward Arnold, and John Wright & Sons, while H. K. Lewis & Co., of Gower Street, sponsors a number of books in nearly every branch of medicine. Messrs. Lewis also run an excellent medical circulating library, familiar to generations of medical students, which should prove invaluable to the man who wishes to dip briefly into all the latest books. This is assisted by reference to their catalogues. Messrs. Foyle, of Charing Cross Road, Henry Kimpton, of Holborn, and Heffer & Sons, of Cambridge, specialise in second-hand books, and also in those on sporting, as distinct from scientific subjects.

Mr. H. H. Grattan, in the Borough High Street, is able to supply most of the books in common demand over the counter; any others he can be relied upon to obtain as quickly as possible.

The Dental Curriculum

THE Dental Student is supplied at the Medical School Office with the Prospectus, Standing Orders, Lists of Instruments, Calendar and Clubs' Union Book.

These pamphlets should be carefully read in order that acquaintance may be made with the general arrangements of the School and the scope of the work upon which the student will become engaged.

Notices regarding the time and place of Lectures are to be found posted up by the main entrance and at the head of the Main Staircase in the Dental Department, and on the notice board outside the Medical School Office.

Instruments having been purchased at a dental depot, the student should satisfy himself that he has been supplied with all of those described in the Hospital list, and have them inspected by his demonstrator.

It is inadvisable to purchase instruments before they are needed. Instruments for prosthetic work are required for the B.D.S. course at the beginning of the second year, and for the L.D.S. course at the beginning of the first year. Clinical instruments are required for the B.D.S. course at the beginning of the fifth year, and for the L.D.S. course at the beginning of the third year.

Among the various depots at which instruments may be purchased are the following: The Amalgamated Dental Co., Broad Street, Golden Square, W.C., and 16, St. Thomas's Street, S.E.1; The Dental Manufacturing Co.,Alston House, Newman Street, W., and 2, Maze Pond, S.E.1; Cottrell & Co., 15-17, Charlotte Street, W.1; L. Porro, Ltd., 33, New Cavendish Street, W.1; The S. S. White Co. of Great Britain, Ltd., 126, Gt. Portland Street, W.1, and 19, Borough High Street, S.E.1. It is a wise precaution to arrange with the company supplying the instruments at very small extra cost to have the handles of all instruments stamped with the student's initials. Students are advised not to purchase equipment or instruments from other students without first referring and submitting these to a member of the Staff.

The course of study for the B.D.S. London covers a period of five years, of which the first year consists of Chemistry, Physics and Biology. The second year is occupied with the study of General Anatomy and Physiology, General Histology and Dental Prosthetics. The study of Dental Prosthetics is continued during the third year, together with Dental Metallurgy. The subject of Dental Anatomy and Physiology, Dental Histology, Medicine, Pathology and Bacteriology constitute the fourth year's work, and the fifth year is occupied by General Surgery (Lectures, Demonstrations and Dressings), Operative Dental Surgery, Orthodontics, Dental Materia Medica, Dental Bacteriology and work in the Conservation Room.

L.D.S. students who come under the New Regulations must pass the Pre-Medical Examination in Chemistry and Physics before they can commence their four years' course. Subsequently, their first term is devoted to Dental Mechanics

and Elementary Anatomy and Physiology, and it is important that the student gets a good grounding in the former at this early stage. During the remainder of the first year the student continues his work in these subjects and takes Part II of the First Professional Examination at the end of the period. In his second year he completes his training in Dental Mechanics, studies Dental Anatomy and Physiology, Normal Dental Histology and Dental Metallurgy, and takes Part III (Special Anatomy and Physiology) of the First Professional Examination at the end of the second term, and Part I (Dental Mechanics and Metallurgy) at the end of the second year.

Third-year students for the L.D.S. commence the Clinical courses with a period of probationary work upon the phantom head. The operative course, conducted by a Staff demonstrator, is very comprehensive. It includes most of the operations that the student will subsequently be called upon to perform upon patients, namely, gold and other fillings, crowns, inlays and the treatment of devitalised and septic teeth. These operations upon the dummy form an excellent ground work in operative dentistry.

Thereafter the course of work consists in holding and diligently carrying out the work of the following appointments: *Probationer Dressership in the Conservation Room; Dressership to the Director of the Conservation Room; *Dressership in the Conservation Room; *Dressership in the Children's Department; Dressership in the Local Anæsthetic Extraction Room; Dressership in the General Anæsthetic Extraction Room; Casualty Dressership; Clerk to Anæsthetist.

In addition, the students prepare for the Second Professional Examination in Medicine, which is taken at the end of the third year of study, and attend the courses in General Pathology, Bacteriology and Medicine. Students are reminded that no course of study for this examination is recognised until Parts I and II of the First Professional Examination have been passed; furthermore, no study for the Final Examination is recognised until the whole of the First Professional Examination has been completed.

During the fourth year, students continue with their appointments in the Conservation Room, Anæsthetic Room and Children's Department, and, in addition, attend the courses of instruction in preparation for the Final Examination, *i.e.*, General Surgery, Dental Surgery, Operative Dental Surgery, Orthodontics, Dental Materia Medica, Dental Bacteriology and Radiology.

A student, apart from those holding the post of Assistant Dental House Surgeon, is not allowed to work in the Conservation Room unless he holds one of the appointments marked *, and application for these appointments must be made by the student quarterly, in March, June, September and December. A helpful pamphlet is available at the Medical School Office, perusal of which will indicate when and for what posts to apply.

An X-ray course is taken by the student in his final year.

The time varies, according to whether the course for the B.D.S. or L.D.S. is being taken, at which a student will come into actual contact with Hospital patients, and he should always try to be punctual in his appointments with them. There is nothing more irritating and annoying to a patient than to be kept waiting unnecessarily; it also delays to a very great extent the easy working of the Department, and is detrimental to the public esteem of the Hospital. Further, the student should always remember to cultivate a courteous and gentle manner towards his patients.

Dental students will profit by following the practice of the Special Departments of the Hospital, *e.g.*, Throat and Ear. They will also have numerous opportunities of observing the more remote effects of dental disorders in the General Wards and Out-Patient Department.

Students in difficulties about their work and needing advice are invited to consult the Dean, Sub-Dean, Administrative Dental Officer or any other member of the Staff, who will be pleased to do what they can to promote their interests.

Guy's Hospital Clubs' Union

THE formation of the Clubs' Union, by the amalgamation of the then existing clubs, took place in the summer of 1891. The object of the amalgamation was to further the interests of the different clubs and societies by their mutual support, and to simplify the collection of subscriptions. By the payment of an annual subscription, at present amounting to 5 guineas per annum, a student obtains the privilege of membership of all the constituent institutions, whereas non-members are excluded from participating in the activities of any.

The affairs of the Clubs' Union is under the control of the Clubs' Union Council, consisting of six Staff and six Student representatives. The Constituent Institutions are: Association

Football Club, Athletic Club, Cricket Club, Debating Society, Dental Society, the *Guy's Hospital Gazette*, Golfing Society, Hockey Club, Lawn Tennis Club, Pavy Gymnasium, Pupils' Physical Society, Rifle Association, Rowing Club, Rugby Football Club, Sailing Club, Squash Racquets Club, Students' Club and Swimming Club. The Christian Union, the Guy's Physiological Society and the Guy's Hospital Musical Society are at the moment not affiliated.

The ground of the Clubs' Union is within 15 minutes' run of the Hospital (in this respect we are very fortunate), situated close to Honor Oak Park Station on the Southern Railway (Brighton Section) and close to Crofton Park Station on the Southern Railway (South-Eastern Section). It is nine acres in extent, and is the headquarters of the Guy's Football, Cricket, Athletic and Lawn Tennis Clubs. The Pavilion has recently been enlarged and improved, and hot and cold showers installed, in addition to several fine baths. A ground is provided for the Junior Rugby Clubs and for the Hockey Club at Worcester Park, which is easily reached from Waterloo Station. Members of the Golfing Society may play on one of many courses at specially reduced rates (see Golfing Society notices). The Rowing Club is affiliated to the London Rowing Club at Putney, where members are entitled to all the advantages of that club.

By kind permission of the Matron a swimming bath in the Nurses' Home is available for students on alternate days. Near this is a court for Squash or Fives (the property of the Hospital) and a recently erected squash court (the property of the Clubs' Union). Times may be booked in the College for play on either of these courts. A shower bath and changing room is provided adjoining the courts.

THE STUDENTS' CLUB

The Students' Club, perhaps the most important section of the Clubs' Union, is housed in the College, where there is now an excellent Catering Company, open only to members of the Clubs' Union. The Pavy Gymnasium is also housed here, where classes are given in Boxing, Fencing and Gymnastics. The Physical and Debating Societies hold their meetings in the College.

Further information about the different clubs can be found in the Clubs' Union Year Book—obtainable at the Medical School Office, and new students are also advised to consult the notice boards in the Colonnade.

Considerable improvements have recently been effected at the ground at Honor Oak Park. A new Grand Stand, replacing that destroyed recently by fire, and seating 600 people, will, it is hoped, be ready by January. There are three hard tennis courts open for general use. A considerable sum has been spent upon thoroughly re-draining and returfing the ground, and it is now in excellent condition.

An excellent programme of home matches has been arranged by the Rugby Football Club—*vide* Fixture Cards—and it should be noted that members of the Clubs' Union are entitled to free admission to the ground on these, as on all, occasions, on production of their membership cards.

For many years it has been our hope to effect a reduction in the subscription fees, but when the many privileges are considered, the fee is only moderate.

Rugby Football Club

THE season 1934-35, we must admit, was not as successful as was hoped. The complete table of results has already appeared in the pages of the *Gazette*, and we will use no space here in retrospect, but rather turn to prospects for the future.

Of those who have done yeoman service for Guy's at rugger two will no longer be available for the First XV this season. P. C. Alexander, who turned out regularly last season and was always a tower of strength with his strong running, elusive cut through and accurate place-kicking—not forgetting his devastating tackling—has left a gap which it will be hard to fill outside the scrum. The absence of A. R. Clarke in the scrum leaves us to find another who has equally unbounded energy both in tight and loose, and such a capacity for backing up and being in the right place.

It seems likely that the injury to his knee, which J. E. Giesen received during the Cup match versus St. Bartholomew's, will keep him out of the game for a long time, but we sincerely hope that this will not be for good, and that we may again be able to call on his invaluable services.

However, rather than commiserate at our losses we must look for fresh talent among those who are playing in the junior teams. There is no doubt that there are many very promising players who did not get their place in the First XV last year. Of these, S. M. Whitteridge, E. B. French, J. A. Drew and C. Halamandres have already produced good form, and there are others in P. H. Birks, A. Baxter, L. E. Milton, G. F. Rees, J. L. Harrington and F. Walt, who will, no doubt, get their turn. The onus of choosing and coaching the

First XV falls largely on the very capable shoulders of C. S. Darke, who is captain this year, and who has already made his name by his determination. If he receives the keen support from all players at Guy's which his energy deserves, there is no doubt that we shall have this year a sound, if not brilliant, First XV.

Of those who played for the First XV last year the following are available this season: E. C. Sharpe (full-back), R. C. S. Dick, R. de Gregory, I. McD. G. Stewart, J. van A. Steytler, C. G. Wright (three-quarters), K. A. Stanyon-Jaques (scrum half), C. S. Darke, E. R. Davies, P. Fletcher, W. Frazer, P. Hopkins, M. R. Kark, T. A. Hale-Monro, I. G. Robin, G. J. van der Merwe, R. O. Yerbury, C. F. Ziervogel.

It is hoped this year to put into force a more systematic scheme of training and coaching, whereby members of the First and A teams will practise together, the extra A and B, and the extra B and C XV's also grouping together for training purposes. In this way it will be easier to hear of and watch promising players, and it is hoped to complete this scheme by the formation of a Selection Committee consisting of the captains of all teams and one or two impartial observers, who will meet once each week to choose teams for matches and recommend promotions. In this way no promising player should be overlooked, and with practice and encouragement the general standard of rugger at Guy's should be improved. One thing is certain—the material is present; it is our job to develop and use it to our best advantage.

Of new rugby talent coming to Guy's this year we know very little as yet. Rumours are rife, but it seems safest here not to count our chickens before they are hatched, and to await the results of the trial games for Freshmen. Such newcomers to Guy's will find a list on the screen in the Colonnade where they are urged to write their names, giving their place on the field and any team they have played for at school or elsewhere. The first trial game will be on a Wednesday in the near future.

At Honor Oak Park many improvements are taking place. The Clubs' Union has already acquired the lease of the five acres adjoining the rugger ground, and on this new land new rugger and hockey grounds are in use. To provide accommodation for the increased numbers of players who will now use the Clubs' Union fields at Honor Oak Park the pavilion is being enlarged and extra changing and washing rooms are being provided and the restaurant is being enlarged. Negotiations are also being made to have a clock and score board erected on the First XV rugger ground, which, if they are fulfilled, will materially increase the pleasure of rugger matches for both players and supporters. One may, perhaps, be excused for including among the improvements at Honor Oak Park the destruction of the old grandstand by fire. It was never pretty to look at and on cold, wet days the enthusiasts in the front rows might well have saved their pockets. Plans have already been submitted for the new stand, but the final choice has not yet been made. The new stand will be built as soon as possible, and will be altogether more up to date and durable. Consideration is being given to adequate shelter and more solid foundation, coupled with a more pleasing appearance.

When the new pavilion and stand are complete it is proposed to play an opening match (we hope in January, 1936). In the evening after the match there will be the official Guy's Rugger Dinner, which will be held at the Grosvenor House, Park Lane. Particulars of this match and dinner will appear in the *Gazette* as soon as they are definite, and we trust all interested in Guy's rugger will make every effort to be present.

We offer our sincere thanks to Mr. Hughes for the time and energy he spent on the rugger club last year, and we look forward to another season with him as President of the Club.

R. C. S. DICK.

Association Football Club

THE Association Football Club begins the season this year with the majority of last season's players, and it is hoped to do even better than last year when well over half the matches were won. It will be seen that this year's fixture list is an attractive one, including matches with R.A.M.C. (Aldershot), the Corinthians and the Casuals. The second and third elevens have also been given an increased number of fixtures, and it is to be hoped that all members will help by turning out regularly.

Will new students wishing to play "soccer" please put their names on the list in the Colonnade.

FIRST XI FIXTURES 1935-36

Oct.	2.	Banstead Mental Hospital.
„	5.	Old Chomelians.
„	9.	Berkshire Nomads.
„	12.	Mercantile Credit.
„	16.	Metropolitan Police College.
„	19.	St. Catherine's College, Cambridge.
„	23.	Royal Marines (Chatham).
„	26.	Welsh Guards.
Nov.	2.	Lancing College.
„	6.	Corinthians.
„	9.	Lancing Old Boys.
„	16.	Old Chomelians.

Nov.	20.	Casuals.
„	23.	National Bank of India.
„	27.	Royal Marines (Chatham).
„	30.	Old Malvernians.
Dec.	4.	R.A.M.C. (Aldershot).
„	7.	Merton Football Club.
„	11.	R.A.F. (Henlow).
Jan.	4.	H.A.C.
„	8.	Berkshire Nomads.
„	11.	Casuals.
„	15.	Metropolitan Police College.
„	18.	H.A.C.
„	22.	Banstead Mental Hospital.
„	25.	Old Wykehamists.
„	29.	Old Hamptonians.
Feb.	1.	Merton Football Club.
„	5.	Boots.
„	8.	Old Malvernians.
„	12.	Corinthians.
„	15.	Beckenham Bedouins.
„	19.	King's College.
„	22.	St. Catherine's College, Cambridge.
„	26.	Welsh Guards.
„	29.	Guy's Employees.
March	4.	Boots.
„	7.	Old Westminster Citizens.
„	14.	Polytechnic.
„	21.	Beckenham Bedouins.

Hockey Club

THE past season was the most successful the Hockey Club has experienced for some years. Four elevens were turned out with considerable regularity, testifying to the keen spirit of the hockey enthusiasts of the Hospital. The First XI reached the final of the Inter-Hospitals' Cup and were then beaten by St. Thomas's only after extra time. During the coming season we aim at surpassing these efforts and bringing the trophy to Guy's.

The most important feature of this season is the acquisition of a new ground at Honor Oak Park, adjoining the Hospital rugger pitch. This will be the first season that we have had a ground which we can really call our own, and it should help considerably in raising the standard of play in the Hospital teams. The pitch shows promise of being an excellent playing surface, and does credit to the hard work of our most efficient and obliging groundsman, Kirby. With the new pavilion finished, the accommodation will be such that any club might well be proud of. As during last season we are hiring a second pitch at New Malden.

A full fixture list has been arranged for all four elevens, the first team having retained, as far as possible, all those matches which were popular last season, and obtaining one or two new fixtures which should provide good games. Matches for the Fourth XI have been arranged only for Saturdays so far, but it is hoped to be possible to arrange some mid-week matches later.

Several of last season's players have left us, and we hope that fresh talent, equal to or even greater than theirs, will be forthcoming to fill their places. We hope to have the assistance of last year's captain, A. G. Richmond, and last year's secretary, J. B. Franklin, both of whom played for the United Hospitals' team. R. G. Archer is captain for this season and E. B. Rowe is vice-captain.

A hearty welcome is extended to all newcomers to the Hospital who intend to play hockey, whether they be first-class players or novices. It cannot be over-emphasised how important it is that people should continue to take some form of exercise after finishing their school life, especially those who work in the grimy atmosphere of the Metropolis. The Hockey Club provides an excellent opportunity of following this advice. It is essential that the Third and Fourth XI's should turn out regularly, as only by keenness and success among the junior teams can the First XI hope to maintain a high standard. It is hoped that all members of the Club will keep themselves thoroughly fit during the coming season, and will play with as much regularity as possible.

To save the team secretaries more work than is absolutely necessary, would members kindly watch the notice board carefully and tick off or cross off as early as possible so that the secretary will not have to waste time trying to find players at the last minute. Will members also endeavour always to wear the correct Hospital colours, a point which adds greatly to the efficiency of the team.

And finally, a forlorn hope maybe, if there are any people at the Hospital who are familiar with the rules of the game but will not be playing, who would be willing to umpire second, third and fourth eleven matches, will they please inform the secretary. All their expenses will be paid. They will be doing a very great service to the Club, which will be extremely grateful to them.

C. F. WRIGHT,
Hon. Secretary.

Lawn Tennis Club

THE Lawn Tennis Club at Guy's has just completed a very successful season. The Senior Inter-Hospitals Cup was won and the Second VI reached the final of the Junior Competition.

The First and Second VI's had a full fixture list, and further matches were arranged for a Third VI.

These were very much enjoyed, and are to be continued. The fixture list contained matches against Melbury L.T.C., Bart.'s, R.M.C., Camberley, Sydenham L.T.C., and some fixtures with Oxford Colleges.

The Tournament for the Lane-Washbourne Challenge Cup was held as usual and had a big entry. This competition is held annually during the Summer Term and is open to all students.

The courts are at Honor Oak Park. There are twelve grass courts and three hard, one of which is to be relaid early in 1936. The dressing accommodation has been enlarged and hot showers are available. Balls can be purchased from the groundsman; balls that have been used in matches are offered at a reduced price.

Trials are held early in the Summer Term, and all players are welcomed. It is hoped that all new members of the Clubs' Union who play tennis will make use of the facilities provided, which compare favourably with most clubs. All equipment can be obtained at Lillywhite Frowd's at advantageous prices by members of the Clubs' Union.

E. P. O. WATSON.

Squash Racquets Club

ALTHOUGH the most recent Club to become affiliated to the Clubs' Union, the Squash Club is certainly one of the most popular of the group. The number of students who use the court shows clearly how widely the game has caught the imagination of those at the Hospital. Nor is the use of the court confined to the students, and often members of the Staff may be seen playing. For the benefit of the students who are new this term and of those who are about to adopt squash as their means of obtaining winter exercise, a few points about the Squash Club will not be out of place.

Last year a number of squash matches were played and the team was, on the whole, successful; there was, however, some difficulty in finding players to represent the Hospital. A squash "ladder" was placed at the foot of the stairs leading to the changing-room, but no one appeared to want to climb the ladder, and so it became quite useless. The standard of squash at the Hospital is not very high; in fact, it cannot be ranked among the best four hospitals. As there are some two hundred players in the Hospital, it does seem odd that we cannot hold our own with hospitals that have only about two hundred students altogether.

This year several additional matches have been arranged, some thirty matches will be played during the season, excluding the inter-hospital league games. Such well-known clubs as the Jesters, the Escorts, the Rumps, as well as old boys' sides of Lancing, Charterhouse and Clifton, are being played. This season it is earnestly to be hoped will be the best season up to date. The Club has only been running four years, and each year until the tenth year of its existence it should improve. It is largely through match practice that one's play improves, and for this reason there will be a competition during this term. Next term it may be possible to hold a handicap competition, allotting handicaps on the performances of players in the competition this term. The ladder will be readjusted, and applications for a "step" on the ladder should be made to the secretary. Once the ladder has been organised, any player not on the ladder has the right to challenge the bottom "step," and, should he beat him, can take his place at the bottom of the ladder. Any "step" on the ladder has the right to challenge the "step" above him, and to take his place if he succeeds in beating him.

I do hope that players will co-operate with the secretary by accepting any challenge that may be made and by challenging the various "steps" as they change. As has been said earlier in this brief notice, if the players do not co-operate and ignore the ladder, then the position becomes ridiculous, and the unknown good players never have a chance of playing either for the Hospital or against better players than themselves.

I think that, in view of the number of women's clubs that are springing up all over the country, and especially in London, it is to be hoped that, if we get our new court, the Nurses of the Hospital will take the game up as a means of keeping their schoolgirl complexion and their figure under control.

Finally, one word to those to whom the game is a mystery. Squash racquets has in the last few years become one of the chief winter games of the active yet busy man. In forty minutes' play one can get sufficient exercise to last for half a week. Perhaps for students at the Hospital one of the chief attractions of the game is the fact that the court is actually at the Hospital. When the rules have been mastered and the ball is beginning to do what one wishes, then the game becomes enjoyable, beneficial to one's health, and also a friendly meeting. To those who take other games seriously squash may be recommended very strongly as an unequalled means of keeping in training. To those who are fat squash is better than any diet. To those who are sportsmen squash is a game to be played and enjoyed.

Lastly, although it is pleasant to play someone whom one knows well, it is to be regretted if two players always play together and never attempt to play any others. As has been said of every game in existence, the way to improve is to get match experience, and the way to get that is to play many different opponents, preferably better than oneself.

R. GILBERT-HARRIS,
Hon. Sec., Squash Club.

Sailing Club

SINCE the building of the new clubhouse at Burnham, the Sailing Club has increased considerably in membership. In spite of this, our success in the Bourne Trophy and Harvey Cup races has been as good as that of former years.

It is hoped that with the increase of membership more first-class helmsmen will be forthcoming. Many men succumb to the temptation of crewing on bigger craft, although it must be remembered that dinghies form an excellent training ground for good helmsmanship.

Perhaps the most noteworthy achievement on the part of Guy's members this year lies in their cruising activities. No less than a dozen members have undertaken cruises this summer, and the U.H.S.C. burgee has been carried as far south as Santander, and as far west as the Atlantic shores of Ireland. In addition to this, Guy's has been well represented in the chief Ocean Races of the season, particularly the Belle Isle Races.

Although the sailing season is almost over, there remains one more important event on our calendar, namely, the Annual Ball of the U.H.S.C. at Covent Garden Opera House.

This dance provides an evening's enjoyment impossible to appreciate by those who have not attended previously. The date is October 25th. Tickets and any information required can be obtained from the Secretary, K. G. Pascall.

Rifle Association

THE Rifle Club is one of which little is heard, probably owing to the fact that only one team of six is run during the season and the number of people interested is comparatively small. Nevertheless, the Club is a very active one, and in recent years has often succeeded in winning the United Hospitals' Challenge Cup and the Armitage Cup, both of which are competed for by teams belonging to the United Hospitals' Rifle Club.

Shooting begins in April and finishes in July, and targets are available at 200, 500 and 600 yards on Wednesday afternoons during these months for practice shoots.

The Club is affiliated to the Middleton Rifle Club, where meals (and drinks) may be obtained. Rifles are supplied by the Club and are kept with the armourer at Bisley.

A United Hospitals' and a Guy's Hospital prize meeting are held each year, when a good collection of valuable prizes is competed for.

Trains run frequently from Waterloo to Brookwood and special cheap fares are available for members at 3*s*.

It is hoped that anyone interested in shooting, whether new to the Hospital or not, will get in touch with the Secretary, who will be pleased to give them any further information.

The Pavy Gymnasium

THE Pavy Gymnasium, built and maintained by the generosity of Dr. F. W. Pavy, is situated in the College and is open to any member of the Clubs' Union at any time. It is equipped for Boxing, Fencing and Gymnastics, and is the headquarters of those clubs. An efficient heating apparatus has recently been installed. There are showers and baths adjacent.

The respective clubs hold their meetings as follows :—

The Boxing Club has already started training for the season. Alf. Hewitt has recovered from his operation, and we are fortunate to have again the services of the best instructor in town.

In order to maintain a good standard, however, new members are urgently required. The Club would welcome any newcomers to the Hospital, whether with or without previous experience, who are willing to come down to the Gym. and box.

Training takes place in the Pavy Gymnasium on Tuesday evenings at 5 o'clock. Further information may be obtained on application to D. H. Mackay, Hon. Secretary.

The Fencing Club meets twice weekly, on Wednesdays and Thursdays at 4.15 p.m., when two instructors are available. An Inter-Hospital Competition takes place once yearly, and many matches are fought against other clubs. Several 2nd Team matches have been arranged in order to provide interest for those whose experience is limited. At the end of the season a Novices' Competition is held in Foil for those of one year's experience, or who have never represented the Hospital. The winner holds a very handsome cup for a year. It is hoped to inaugurate a Novices' Sabre Competition on the same lines, but up to the present there is no cup available.

The Gymnastic Club holds its meetings once a week on Fridays at 5 p.m. The class is taken by an instructor and exercises are carried out

both with and without the help of the apparatus. Efforts have been made to arrange matches with other clubs, but so far they have not met with success. A Gymnastic Competition is held yearly. The apparatus is always available for practice. It is rather a forlorn hope to ask that those using it should put it away when they have finished.

Further details of the above clubs may be found on the notice boards in the Colonnade. A cordial welcome is extended to all new members, who are invited to turn up at the meetings, no matter whether or not they have had any previous experience.

The Christian Union

THE first mention of a Christian Union at Guy's occurs in 1849, when Dr. Habershon, of Guy's, and Dr. Gladstone, of St. Thomas's, started a " Bible Reading " for their students.

In 1853 the name of Dr. Golding-Bird, then Assistant Physician at Guy's, became closely associated with the Union, and he took an active part in organising its proceedings.

Since those days the Union has continued, with one or two short intervals, and has undergone several changes in its organisation, made necessary by varying conditions, until it has reached its present form.

It now exists as a means of uniting those men in the Hospital who have taken the Lord Jesus Christ as their personal Saviour and are determined to live their lives to His Glory, and to spread this knowledge of His saving Grace. In addition, it forms part of the London Inter-Faculty Christian Union, which is one of those incorporated in the Inter-Varsity Fellowship of Evangelical Unions.

Anyone in sympathy with the objects of the Union is cordially invited to the meetings for prayer in the Chapel at 1 o'clock on Tuesdays and at 12.40 on Fridays. A meeting for Bible Study is also being arranged.

The Pupils' Physical Society, 1935-36

Hon. President.—John Fawcett, M.D.

Hon. Vice-Presidents.—Sir William Hale-White, K.B.E., M.D.; Sir W. Arbuthnot Lane, Bart., C.B., M.D.; A. P. Beddard, M.D.

Presidents.—P. W. Clarkson; R. W. Cope; C. A. Lillicrap; J. H. Mayer; W. N. Mann; C. G. Pantin; M. A. Partridge; E. Sayle.

Hon. Secretaries.—W. J. Ferguson, F.R.C.S.; E. T. Conybeare, M.D.

The Pupils' Physical Society of Guy's Hospital is an old and honoured institution. With some such trite tag as this countless secretaries have introduced the Society to the notice of new students entering the wards of Guy's Hospital. Forty years ago, young men would present their papers to the Society with a similar remark, and add that they felt honoured to be allowed to read their papers before so learned a body. The odd thing is that what they said was true; honoured they were, and old and learned is the Society.

I have this evening been reading through the Minutes, as they are written down from 1885 onwards. By doing this I was impressed with the continuity of tradition which has existed through that time and doubtless from times still earlier. The Physical Society has a character of its own such as is only attained by the exercise of much thought and effort on the part of its officers, those who have shown cases and read papers.

In these Minutes are reflected the history of Medicine during the past 50 years, the changes which have taken place in medical training, even the changes in the mode of life of students and of Staff. Illuminating flashes fall from time to time on great characters of the past who exist for us as names only: Samuel Wilks, William Osler, Frederick Taylor, E. H. Starling—and most of those whose names figure to-day on the honorary and consulting staff stand out for a moment as having held office, read a paper, or taken part in a discussion of the Society. The scene changes, the names change, but throughout runs the thread of continuity.

In looking through the programmes of the Society, one is struck by the fact that from 1885 to 1888 a paper was read on eleven of the twelve occasions the Society met annually. In 1889 it was suggested that clinical meetings should be held more frequently—every third meeting. Those were spacious days, when members readily transferred their views to paper and flocked to hear each other talk. In those days, too, members of the Society paid five shillings subscription, and in 1888 the Minutes inform us that ninety of them did so, though I notice the secretaries' tick against the names of those who paid is sometimes absent.

It is of interest to compare the titles of papers read in the eighties with those of more modern times. " Empyema," by F. Heatherly, " Puerperal Eclampsia," by G. Rowell, " Diabetes," by H. J. Campbell, were subjects in the programme of 1886-87. Any of these might form the subject of a paper to-day, but how differently would they be treated. Occasionally a paper is read which

throws some light on the prevailing subjects of medical interest at the time. "Hydrophobia" was the title of C. J. Whitby's paper in 1886, just a year after Pasteur had successfully treated his first case. "Diphtheria," by W. C. C. Pakes, was the subject of a paper read in 1894-5 at the very time when Roux and Behring were carrying out their pioneer work with the use of diphtheria antitoxin. In 1911 a discussion on "Bone-Setting" was opened by Mr. (now Sir) Arbuthnot Lane—the title reminds one of the revolutionary changes in bone-surgery that had a short while before been introduced by Mr. Lane himself.

Throughout the first half of the Minute Book are scattered letters from Sir Samuel Wilks, the honorary president for many years. In reading these letters one cannot fail to be impressed by the sincere love he had for all things connected with Guy's, and especially the Physical Society. In 1900 he replies to the then secretary, Mr. Bellingham-Smith, expressing his willingness to take the Chair at the opening meeting, but modestly suggests that a younger member of the Staff should be appointed in his place. "If anyone could give me a hint by saying that a change was desirable," he says, "I could send in my resignation." No hint was given, however. In 1907, in a further letter, he again suggests that a younger man be chosen and at the same time mildly reprimands the secretary for not having provided him with a paper of the proceedings to which he could refer, on the occasion of the opening meeting the previous year. The last reference to Sir Samuel is made on the occasion of the Conversazione with which the Society opened its session in October, 1910. This was a great occasion; the function was held in the new Medical School Buildings still uncompleted, and on this occasion many of the oldest members of the Staff who represented the past era in medicine met with those whom we now know as senior members. Thus Sir Samuel was in the Chair, "supported," as the *Gazette* report says, by Drs. Perry, Goodhart, Taylor and Savage, vice-presidents. Drs. Hale-White and Lauriston Shaw were still on the Staff, as was Sir Charters Symonds and all were present, and of those better known to us were Messrs. C. H. Fagge, Eason, Mollison, Bellingham Smith, Hopson, Dowsett and Aubrey.

Dr. Eyre showed some "very fine slides and a series of exhibits showing the various stages of the Wassermann reaction," and gave a "clear account of the meaning of the test and the method of carrying it out to an interested crowd." Dr. Price Jones showed a Burker's modification of the Thomas Zeiss Hæmocytometer, and Dr. Ryffel demonstrated "some clinical methods." On this occasion Sir Samuel Wilks brought down his diploma of qualification signed by Liston and others in 1847. Is it too late to hope that some member of the Staff, who still remembers the earlier generation, their characters, their habits and idiosyncrasies, should read a paper to the Society about them, before they and the type of medicine they represented are forgotten? Sir Charters Symonds delivered an inaugural address in 1922 entitled, "Some Old Surgeons and their Writings," from Chesledon of St. Thomas's (1718-1738) to Henry Howse (1870-1902).

One other meeting should be mentioned as of special importance. This was held on October 21st, 1905; the Society was addressed by Sir William Osler, and it was the first occasion on which he spoke in public in this country since his appointment to the Chair of Regius Professor of Medicine of Oxford. The subject of this address was the life and works of Sir Thomas Browne, born just three hundred years before.

These details throw some light on the Pupils' Physical Society in the past. It fills the same need now that it filled a hundred years ago when it was founded on its present basis. It offers an opportunity for those to whom Medicine (and the word is used in the comprehensive sense, which includes Surgery) is something more than a mere means of existence, for those who desire to know more than is necessary merely to get through examinations—in short, for those for whom Medicine is still an Art.

Guy's Dental Society

THE Annual General Meeting of the Dental Society was held on Thursday, April 25th, 1935. The following officers were elected for the season 1935-36 :—

President:

K. Hooper, Esq., M.R.C.S., L.R.C.P., L.D.S.

Vice-Presidents:

H. C. Malleson, M.R.C.S., L.R.C.P., L.D.S.;
F. N. Doubleday, M.R.C.S., L.R.C.P., L.D.S.;
G. B. Pritchard, M.R.C.S., L.R.C.P., L.D.S.;
W. Kelsey Fry, M.R.C.S., L.R.C.P., L.D.S.;
A. Bulleid, M.R.C.S., L.R.C.P., L.D.S.;
R. E. Rix, M.R.C.S., L.R.C.P., L.D.S.;
F. S. Warner, M.R.C.S., L.R.C.P., L.D.S.

Hon. Secretary.—J. W. Harvey.

Dental Correspondent.—J. L. Harrington.

Hon. Treasurer.—F. L. Ingram.

Hon. Dance Secretary.—C. M. Debenham.

Committee.—

Any Year Representative	D. C. J. Cuxtable
4th Year Representative	R. F. Parfitt
3rd Year Representative	C. P. Wright
2nd Year Representative	E. R. J. Walmsley
1st Year Representative	B. D. Clerk

The purpose of the Society is to enable all members of any year to meet fortnightly to listen to and discuss papers read by students and qualified members of the profession.

The papers read during the season 1934-35 are as follows :—

1. " The Treatment of the Patient," the Presidential Address by Colonel E. B. Dowsett.

2. " The Clinical Aspect of Alveolar Abscesses," by Mr. H. C. Davis.

3. " Anæsthesia in Dental Practice," by Dr. R. L. Soper.

A full-length film was shown at a later date, illustrating his method of administering intratracheal gas and oxygen.

4. " Necrotic Gingivitis," by Mr. Hayton-Williams.

5. " The Disappearance of Dentistry," by Mr. E. Dunstan.

6. " John Keats," by Mr. F. M. Doubleday.

7. " Government Control of Dentistry," by Mr. J. W. Turner.

8. " Maldevelopment of the Jaws," by Mr. R. O. Benton.

9. Dr. Winter's Films of the Removal of Lower 2nd Molars shown by Mr. Kelsey Fry.

10. " Full Denture Prosthesis," by Mr. H. A. F. Thompson.

11. " Local Anæsthesia," by Mr. K. A. Keith.

12. " Service in the Army Dental Corps," by Major S. H. Woods.

There were also the following Casual Communications :—

1. " Gemmination," by Mr. P. R. Down.

2. " Dental Benefit under the National Insurance Acts," by Mr. D. E. Holdway.

3. "A Short Note on Stainless Steel," by Mr. D. Wiggington.

From the above can be seen the extremely wide sphere which the various discussions cover. It offers an excellent opportunity for all those who have decided upon Dentistry as a career to digest some of the most interesting topics of that study without the element of Queen's Square looming into the conversations.

Prizes are offered each year for the best paper and casual communication read by a student before the Society, the judging of which is performed by the President and Vice-Presidents.

Like all successful societies, the Guy's Dental Society holds an Annual Dance. The popularity of this has been increasingly great, so that this year it has been decided to appoint a Dance Secretary to arrange the various necessities which promote a really first-class evening. The dance is being arranged some time about the end of November, and it is hoped there will be as good an attendance as is usual.

The Annual Dinner, which was held last year at the May Fair Hotel, is to be held at the " Grosvenor House " in March, 1936, and should prove as successful as in years past.

The Debating Society

THE Debating Society was revived in May, 1932, after a lapse of many years. Since then, under the Presidency of Dr. Ryle, it has held a number of successful debates, and it is hoped that during the coming winter meetings may be arranged regularly once a month. The Society is a constituent of the Clubs' Union and all students are entitled to attend its meetings without further subscription. Indeed it is hoped that as many as possible will make a point of speaking at these meetings, since they provide practice in giving a reasoned exposition of one's views—an art lamentably rare even amongst the mighty.

Debates are held in the College Smoking Room, usually at 5.15 p.m., so that those living outside the Hospital have a chance of attending, and refreshment is provided.

Originally this took the form of coffee and biscuits, but recently an experiment was made in the provision of beer at all meetings, in the hopes of inspiring a certain eloquence which comes to many only amidst the clink of glasses.

However, in spite of this and the fact that meetings are held in the Smoking Room, it must not be thought that the Debating Society is merely a cloak for debauchery.

The subjects for debate are varied, and amongst the most successful meetings last year was a visit from two eminent osteopaths to defend osteopathy as a method of healing.

These remarks on the Debating Society would be incomplete without thanking Dr. Ryle for his services in presiding over the Society and congratulating him on his appointment at Cambridge.

A general meeting will be held later in the month.

A. G. W. HILL.

The Physiological Society

President.—W. R. Spurrell, Esq., M.Sc., M.S., F.R.C.S.

Secretary.—R. V. Coxon.

Treasurer.—H. D. Smith.

Committee.—J. M. Brown, D. G. Graham-Brown, E. Dunstan, H. B. Cardew, F. W. B. Rilstone.

THE distinction of possessing a Physiological Society is one which Guy's shares with only one other London hospital. The Society was founded in 1901 by Prof. Pembrey, and it has been truly described as his "ewe-lamb." Prof. Pembrey was one who, himself holding strong views on many subjects, rejoiced in verbal battles, and in the Physiological Society he sought at once to stimulate the student's interest in the problems of physiology and at the same time to encourage him to sharpen his wits and his tongue by defending his beliefs *coram populo*.

Changes have, of course, occurred since those primordial days. Prof. Pembrey has gone and the Society's student members alter from year to year, so that some of the original members now grace the Hospital Staff, but the Society itself, at present under the competent guidance of Mr. Spurrell, continues its evolution like the immortal germ-plasm, familiar to all biologists.

The Society meets during the Winter and Spring Terms once a fortnight at 4.30, and the meetings are generally preceded by an informal tea. The procedure at the meeting is for a (student) member of the Society to read a paper on some topic of physiological interest (the word being interpreted in the widest sense), after which the subject matter of the paper is discussed by the other members present. The chair is usually taken by some member of the Hospital Staff, who is particularly interested in the subject of the paper.

Lest any should be deterred from joining by the thought that the Society may bear the stigma of being a resort for "swots," let it be said that, with a few very isolated exceptions, all the people studying in the Physiology Department become members of the Society; membership is, however, not confined to such people, many staunch adherents being drawn from other sections of the Hospital community. It is the general finding that the Society provides a means of making the study of physiology a pastime rather than a drudgery, so that it might be called with equal appropriateness, though perhaps with less propriety, "the Brighter Physiology Society."

The annual subscription is a very modest sum, viz., 3*s.* 6*d.*, but this can be redeemed in kind by taking tea before the meetings, there being no charge made to members for this privilege.

R. V. COXON

Guy's Hospital Musical and Operatic Society

SEASON 1935—1936

THE Guy's Hospital Musical and Operatic Society as at present constituted dates back only a decade, to 1923. Its immediate ancestors, the Nurses' Choral Society, and the Students' Glee Club were very much older organisations, and minutes of the former bearing the date 1895 are in the possession of the present secretaries—and, no doubt, matters musical were not neglected even before that.

It is, however, the present with which we are concerned in this article. The Society is not a member of the Clubs' Union or the Nurses' League, as it is not purely a student organisation, but a Society whose aims are to cater for all who are in any way connected with Guy's who are interested in music. This season the Society is embarking upon a programme which, it is hoped, will tempt the palate of all from the senior members of the Staff to the Freshman straight from school and the nurse still in the Preliminary Training School.

Firstly, taking pride of place perhaps only because of the magnitude of the enterprise, comes the production of Gilbert and Sullivan's comic opera "Princess Ida," performances of which are to be given at the Fortune Theatre, Drury Lane, from March 3rd to 7th. The vocal rehearsals are just beginning, and take place in the Dental School on Thursday evenings at 8 p.m. sharp, and there are plenty of vacancies in the chorus at present.

Secondly, but of no less import, is the Hospital Orchestra, which has this season taken on a new lease of life. It is not for the writer to stress the value of orchestral experience to any instrumentalist, and we may merely point out that there are already about 30 members of the Hospital who come to the weekly rehearsals in the Nurses' Home, also on Thursdays at 8 p.m. There is to

be a concert given in the Physiology Theatre on Thursday and Friday, October 24th and 25th, and we would venture to suggest that newcomers to the Hospital may find it a pleasant duty to make a point of attending on one or other nights.

Thirdly, though the final details are still under discussion, plans are being made to produce a play, probably by our Patron, Major Ian Hay Beith, better known as Ian Hay, in the latter part of November. Further details of this and other activities will be posted from time to time on the Society's notice board in the Colonnade.

It is a poor philosophy to hide one's light under a bushel, and the Musical Society in extending its welcome to all newcomers to the Hospital assures them that it will be only too pleased to see any of them at a rehearsal, or to hear from them through one of its secretaries, or through the Wills Librarian, Mr. G. A. Winston. Those who are interested in the orchestra should write to R. G. Siggers at the Hospital, and those who feel inclined towards the Opera should apply to W. Howard Clarke, at the College.

D. H. MACKAY,
W. HOWARD CLARKE,
Hon. Secretaries.
R. G. SIGGERS,
Hon. Orch. Secretary.

Nursing News

THE Nurses' Debating Society opened its Winter Session on Tuesday evening September 24th by holding a debate, the subject of which was : " That it is in the interest of the community to consider first oneself."

Dr. Vertue kindly presided and did his best to encourage the more timid of the large and interested audience to take the floor and express their thoughts. The speakers—Nurses Truscott and Beastall (proposers) and Wadham and Howard (opposers)—were convincing.

There was much talk of the benefits to the individual and to the community of works of art and of such inventions as steam engines, weaving looms and zipp fasteners. Disputants could not decide whether the perpetrators of the above gave their contributions to satisfy their instincts, to save themselves trouble, or to benefit the community. It all got very involved.

One speaker said that unselfishness is generally silly, and was emphatic that the selfish nurse who does all her own work bestows the greatest benefit on the nursing community. She disapproved of unselfish nurses who gave their work away. (Cheers.) The snuffling nurse with a heavy head-cold was also urged to consider herself and stay off duty.

In spite of the conviction of these arguments the opposers took up the cudgels on behalf of selflessness and sacrifice, for with self-seeking individuals how could the ideal of co-operation be attained ?

It was all most amusing and confusing, and the results of the voting were equally so. There was no time to straighten out the tangles, and the issues were as muddled as a Geneva Convention. The proposition was carried blindly and hilariously—48 against 30. Everyone is clamorous for more argument, and it is hoped to arrange another stimulating evening very soon.

Errata

We regret that there were two misprints in Dr. Poulton's clinical lecture on " Dyspnœa," which appeared in our number of September 14th.

On page 347, for " jalol," read " salol."

On page 349, " the depression of the respiratory increases the carbon-dioxide content of the blood," should, of course, read " decreases."

Officers Training Corps

HERE at Guy's we have a branch of the University of London O.T.C. (Senior Division), for No. 3 Company of the Medical Unit of this contingent consists of medical and dental students from Guy's Hospital.

The whole contingent is close upon 1,000 strong, for it includes Artillery, Sound-Ranging and Survey, Engineer and Infantry as well as Medical Units, and the members of the former units are students at other colleges and institutions of the University.

The Medical Unit is formed of students of the various hospitals, is 450 strong, and divided into eight companies, the two companies of four Field Ambulances respectively.

Firstly it should be clearly indicated that the training of the Senior Division O.T.C. differs totally from that in the Junior Division. Officers' pattern clothing is worn, and the work is intended to render the officer cadet capable of fulfilling competently the post of a commissioned officer in Regular, Territorial or Reserve Army in time of peace, war or national emergency. It is quite certain, however, that the knowledge obtained as a medical cadet is frequently of inestimable value to a civilian medico in general practice, particularly when required to train the personnel of Red Cross and similar voluntary aid societies, members of the police force in First Aid and bandaging duties, and other such bodies.

It is worthy of note that membership of this body constitutes almost the sole mode of liaison in student life between the hospitals and other constituent institutions of the University, and in this way the student obtains a foresight into the work of the other branches and makes friends who, in later life, will work in widely different spheres.

To reach more detailed facts, membership of our O.T.C. entails attendance in mufti at a certain number of lectures given in term-time at the Hospital, and presence for at least ten days at Annual Camp, which is held during the last complete fortnight of July, always at a seaside resort, usually Eastbourne, Folkestone or other South Coast town. It is probable that in 1936 we shall go to Eastbourne.

A camp over Whitsun week-end, attendance at which is voluntary for members of the Medical Unit, is held at Princes Risborough, Bucks., adjoining the Prime Minister's residence, Chequers, on property belonging to the O.T.C.

Friendly rifle-shooting competitions are usually held, and, although this is the only acquaintance the Medical has with a rifle, for officially he is unarmed, the Unit shows up very well, frequently beating the Officers, the Permanent Staff and other Unit teams.

A Field Day is held in March each year, and in most years a Guard of Honour is mounted on a member of the Royal Family.

The only expense entailed is the purchase of brown shirt, collar and ties, and a stout pair of brown boots; all uniform is provided free, and travelling to and from and maintenance at Annual Camp is paid for by the O.T.C., so that a remarkably inexpensive holiday in suitable surroundings is offered to anyone keen on an open-air life. In return we expect each member to put his whole weight into the work, which in itself is full of interest, during the short hours allotted for that purpose, and then, with the uniform, all responsibility may be cast aside and each man is free to enjoy himself as he wishes for the rest of the day, for there are no restrictions as to time of return to camp, etc.

To those who contemplate entering one of the Services upon qualification invaluable advantages are offered, including six months seniority, and early application for membership is advisable.

Shortly a descriptive booklet will be sent to all newcomers to Guy's, but in the meantime further information and forms of application may be obtained from D. J. Wigginton, in the Dental Department; D. Graham-Brown, in the Wards; and from the writer in the Conservation Room of the Dental Department on Monday and Thursday afternoons.

All keen men will be heartily welcomed.

H. H. KENSHOLE,
Capt., R.A.M.C. (T.A.).

Reviews

Guy's Hospital Reports. April, 1935, Vol. 85 (Vol. 15, Fourth Series), No. 2. *Price* 12*s.* 6*d.*

ALL too often are the *Guy's Hospital Reports* are prefaced by an appreciation of some distinguished Guy's man who has left us for ever. William Henry Trethowan died in November, 1934, and in this number we are reminded, in a brief survey by Dr. Conybeare and Mr. Lambrinudi, of his wisdom as a man and his greatness as a surgeon and teacher. Although "Treth's" life was cut short at a comparatively early age, yet we know that he did live every moment of it, and if the penalty for burning the candle at both ends be an early demise, we are tempted to think that it is worth it.

The remainder of the Reports consists of 18 short articles mainly of clinical interest; of these the Resident Staff has contributed six.

Dr. E. T. Conybeare and Dr. L. J. Witts have written of a "Criterion for the Treatment of Asthma." One hundred and twenty-seven patients were seen at weekly intervals and given subcutaneous saline injections. Their home treatment consisted of ephedrine and adrenalin for the actual attacks and an avoidance of any obvious precipitating cause. About half the patients improved

after two months, but of those who were only slightly bettered there was a relapse in the succeeding four months. The results appear to agree in essence with other workers who have tried other forms of treatment; this makes us suspicious, although the authors are by no means dogmatic on the point, that a common factor underlies all forms of treatment, and that a simple injection is probably as efficacious as a complicated vaccine.

Mr. Gibberd writes of Delayed Chloroform Poisoning in obstetric practice, analysing ten cases. In all there is no reasonable doubt but that the chloroform was responsible for death, although the differential diagnosis of toxæmia of pregnancy and septicæmia is considered. The interesting points in his commentary are (1) that jaundice may never occur; the explanation for this is presumably that with the destruction of the Kupffer's cells bilirubin is not formed in sufficient amount elsewhere in the reticulo-endothelial system to produce jaundice before death occurs. (2) The almost constant rise in the blood urea, although kidney function is normal. The cause for this is presumed to be the actual breakdown of liver cells—in other words endogenous urea formation. In all cases that came to autopsy the characteristic central necrosis of the liver was found, and this feature helps us to differentiate the condition from septicæmic states where the necrosis is mainly mid-zonal.

The ætiology of cirrhosis of the liver is discussed by Mr. J. R. Forbes. He appears to have a fairly clear-cut case due to N.A.B., although he does not entirely discountenance the idea of a syphilitic origin. His most interesting point is that N.A.B. *can* cause cirrhosis; he quotes a case of Bulbridge in this connection; a patient developed cirrhosis following arsenical treatment, although there was never any evidence, either serological or post-mortem, of syphilitic infection, the patient receiving treatment at her own insistence.

Mr. I. G. Robin describes four cases of leuco-erythroblastic anæmia—that is, an anæmia in which the blood picture shows immature forms of both the red and white series. The condition usually occurs in association with carcinomatosis of the bones. Formerly it was thought that the anæmia was due to a destruction of the hæmopoietic system by abnormal tissues, but evidence is brought forward to show that the marrow is actually hyperplastic. Therefore one must suppose irritation rather than destruction to be responsible. Other conditions—such as multiple myelomata and aleukæmic leukæmia—may give rise to a similar blood picture, and the differential diagnosis is considered. Vaughan's theory that the disease may be due to a deficiency, as in pernicious anæmia, is also discussed.

Mr. Mann writes of a case of Monocytic Leukæmia in which 62 per cent. of the white cells were typical monocytes. The association of this disease with sepsis, especially ulceration of the gums, is stressed. Enlargement of glands is not marked, but, as in this case, there may be leukæmic deposits under the skin.

Dr. Bedford, Dr. Campbell and Dr. Wood have investigated the action of a new species of strophanthus, *s. emini*, on auricular fibrillation. They find that the new drug is as sure in its action as the old, but that it has the same drawback, namely, that the therapeutic and toxic doses are too close together. Strophanthus emini is mainly indicated where a quick response is essential; here it is slightly superior to digoxin.

Mr. A. M. G. Campbell gives us two case histories of hypertensive cerebral crises. In the first amaurosis was the leading symptom, and the differential diagnosis from cerebral tumour is discussed. In the second, periods of unconsciousness suggestive of epilepsy are met with. Mr. Campbell emphasises that in neither case is a diagnosis of uræmia permissible.

Mr. Alexander reports a case of Diabetic Coma associated with polycythæmia. He suggests dehydration as a cause, but thinks that hyperphoria is a possible contributory factor. The reviewer regrets that he has been unable to find out the meaning of this word—even from the contributor.

Dr. Starling in two papers writes respectively of achalasia of the cardia associated with gastric ulcer and achalasia giving rise to severe pressure symptoms. In the former he gives two case histories, and these are made more interesting by the suggestion that the waterbrash accompanying duodenal ulcer is due to a temporary reflex achalasia. In the latter the severity of the pressure symptoms, mainly respiratory, is stressed. In a third paper Dr. Starling reports a case of melæna associated with a polyp of Meckel's diverticulum.

Dr. Grant contributes an article on a new portable thermo-electric couple for measuring skin temperatures.

Dr. Conybeare is at his best when dealing with hysteria, and he describes four interesting cases of hysterical tetanus, two in nurses, one in a medical man, and a fourth in a Portugese.

After reading Dr. Cohen's paper on Headache as a feature of the Meniére syndrome we must be convinced that it is as common a complaint as tinnitus. The position of the pain varies, but is always in the sagittal plane. Certain general aspects of headache are also discussed.

Mr. Blazeby describes, rather sketchily, a case of cerebellar hæmorrhage.

Mr. G. P. A. Whitwell is very interesting on the subject of Erythema nodosum and erythema induratum. He brings forward convincing evidence to show that in children erythema nodosum is associated with the spread of the primary tuberculous complex. Bazin's disease, on the other hand, is more commonly found with secondary tuberculous infections. He does not insist that every case of erythema nodosum is tuberculous, but he regards it as the commonest single cause.

Dr. de Navasquez describes an unusual bone marrow tumour occurring in the suprarenal gland; he divides off this type of growth from the commoner bone marrow heterotopias found elsewhere, which are formed in response to a stimulus for hæmoporesis. The tumour he deals with is probably derived primarily from a reticulum cell, but the stimulus which causes it to form blood cells is unknown.

Mr. Reading and Mr. Blaikley conclude the volume with a report on treatment by radium at Guy's Hospital during the years 1930-1933. It makes rather depressing reading, rodent ulcers being the only group of cases in which a moderate degree of success has been obtained.

C. A. C.

Gray's Anatomy. Edited by Professor T. B. JOHNSTON, M.B., Ch.B. Published by Messrs. Longmans, Green & Co., Ltd. Twenty-sixth Edition. 1,516 pp. *Price* 42*s*.

THE possession of a complete text-book of Anatomy is a necessity to every student of the subject. The choice in this field is limited, for two or three anatomical works have for so long been predominant that the purchase of one or other is almost inevitable. Their merit has earned them their position, and it is a fortunate circumstance that, in contrast to the sister subject of Physiology, whichever of these leading books is bought, the choice is a good one.

Gray's Anatomy needs no introduction to medical students anywhere in the world, least of all to members of this Hospital. Descriptive anatomy may have changed little since Gray wrote the original work. Professor Johnston indeed points out that of the 363 figures which appeared in the first edition, 104 have still been retained, though the total number has now risen to 1,323. Terminology at least has undergone in recent years drastic alterations for the better, and that adopted here, the British Revision of the B.N.A., continues the movement towards simplicity and unanimity in nomenclature.

In this edition the section on Osteology has been written with the object of being primarily of use to the junior student. Such a presentation of this subject is in every way admirable. Osteology is the essential foundation of the proper study of the dissected part, and to master it should be the objective of the student's first year.

Of particular value to the more senior student are the foot-notes, with references. These stimulate interest and tell, without the necessity of reference to the end of the chapter, where further information may be obtained.

On the technical side the production of the work is excellent, the print is clear and easily read, and the diagrams stand out well, with the emphasis on the important features.

The necessity which the demand has created for repeated editions of this book, each of which embody considerable changes, refutes again those who consider anatomy a dead subject.

Handbook of Physiology. By W. D. HALLIBURTON and R. J. S. MCDOWALL. Published by John Murray, London. Thirty-fourth Edition. 971 pages. *Price* 18*s*.

THE new edition of this well-known and popular text-book of physiology has undergone only very slight alteration as compared with the 1933 edition. Minor additions, such as a description of the new theories of the chemistry of muscular contraction, the study of the properties of unstriated muscle, a mention of Heyman's work in connection with carotid sinus reflexes, of May Mellanby's observations on deficiency of Vitamin D in connection with dental caries, and of Hartridge's experiments in support of the Helmholtz theory of hearing, have been made, but the total length of the book is unchanged.

In one or two places one would have liked to have seen more mention made of the recent knowledge which has come to hand during the past two years. The sections on the endocrine organs and reproduction, for instance, have undergone very little revision. The description of the testis and ovary is exactly the same as in the last edition, except that a short paragraph on the chemistry of œstrin is added, and here it is stated that the exact structural formula has not yet been worked out, whereas in actual fact physiologists have been familiar with the chemistry and structure of a large number of œstrogenic compounds for at least two years. It is unfortunate that the author refers to the male hormone by the term "proviron," which is the name used for an extract manufactured by a certain commercial firm. The hormone itself is now universally known as androsterone. The impression is given that the

corpus luteum is responsible, at any rate, for the initiation of lactation. As early as 1930 Corner pointed out that the anterior lobe of the pituitary was actually responsible for this change.

In comparison with other text-books of physiology, the book occupies an intermediate position. It is not so long as Starling, nor so much a book of reference as Bayliss. On the other hand it is not so condensed as Bainbridge and Menzies. It therefore has a distinct value for the student, since it is easy to read, authoritative and comprehensive.

P. M. F. B.

Modern Treatment in General Practice. Volume II. Edited by C. P. G. WAKELEY, D.Sc., F.R.C.S. Published by *Medical Press and Circular.* Pp. 382. 10*s.* 6*d.*

THIS is the second of two companion volumes, and consists of forty articles on various aspects of medicine, surgery, neurology, gynæcology and pædiatrics, by thirty-nine distinguished authors, all of whom are acknowledged authorities on the subjects with which they deal. Sir William Willcox writes on the treatment of gastric and duodenal ulcer, Sir Harold Gillies on the repair of facial injuries sustained in road accidents, Mr. Joll on the treatment of thyrotoxicosis; and this is an example of the diversity of subjects included in the book. There is also a diversity of writers: England, Scotland, Wales, Australia and the United States are represented in the list of contributors.

Perhaps the first thing about the book that strikes one is that it is "readable." Factors that contribute to this important quality are the clarity and simplicity with which the articles are written, together with the fact that they are commendably brief. Nor is this brevity obtained at the expense of the amount of information provided, or by a descent to anything resembling the synopsis style. The book is well illustrated with photographs and drawings. It is difficult to understand the purpose underlying the arrangement of the articles, which appears to be of a purely haphazard nature. The treatment of chip fractures of the phalanges appears between the treatments of lupus erythematosus and lobar pneumonia; the treatment of diabetes in children nestles between that of cancer of the rectum and the rôle of surgery in the treatment of pulmonary tuberculosis, while Mr. Palmer's "The Prolapse Syndrome and Its Treatment" is sandwiched between Dr. Sington on "Anæsthesia in Children" and Mr. A. d'Abreu on "Fractures Around the Elbow-Joint in Children." The index, on the other hand, is well arranged and ample, and the caprice of the arrangement of the whole gives a pleasant sense of variety and repeated surprises to those who turn over the pages for pleasure. At the exceedingly modest sum of half a guinea this book, containing so many of the recent advances in medicine and surgery, should endear itself to every general practitioner, and should prove a welcome and stimulating change for the student from routine text-books. We recommend it most cordially.

Prognosis. Volume I. Published by the *Lancet*, Ltd. Pp. 384. *Price* 10*s.* 6*d.*

ACCURATE prognosis is to the student a source of wonder, to the colleague a cause for admiration, while to the layman it appears as the gift of prophecy. It is the most arduous and difficult of the medical graces to attain, but as relatives unfortunately outnumber and outlive patients, it is the one on which the doctor is most frequently judged.

In any illness a prognosis entails an ability to judge the chance of survival, to predict the length of life, to foresee complications, and to assess permanent damage and future disability. Skill in prognosis is only obtained by keen observation and long experience. The general practitioner is therefore most likely to excel in the more common accidents and illnesses, and it is in the rarer conditions that the help of his specialist colleague is appreciated. The recent excellent series of articles published in the *Lancet* fulfil this need. Each specialist who was asked to contribute was given a free choice of subject; each, therefore, could give the profession the benefit of the experience most particular to him. The result of this policy is admirable; the papers are individual rather than statistical, and range through every aspect of medicine. They are clearly classified into groups, thus dispensing with an index. The gaps in this wide choice of subjects merely show how important is the continuance of this series and how welcome will be the next volume.

C. G. B.

Materia Medica for Nurses. By LOIS OAKES, S.R.N., D.N., and ARNOLD BENNETT, M.P.S. Published by Messrs. E. & S. Livingstone. Pp. 400. *Price* 7*s.*

TEXT-BOOKS are of three types: those which stimulate interest, those which satisfy inquiry, and those rare ones which happily do both. This is of the second type. Written by the author of "A New Dictionary for Nurses" in conjunction with a qualified pharmacist, it aims at covering the syllabus of the General Nursing Council in a concise and simple manner. In scope

and conciseness it more than succeeds, for it is a mine of concrete and entrenched facts, unrelieved by any lighter seam, but ready for the pick of the resolute digger after knowledge. The simplicity and even starkness of its arrangement, however, tends to defeat its end, for one has to look in different sections for information about any particular drug, and there is much repetition. Furthermore, the drugs are dealt with in alphabetical order, whereas to nurses, who are primarily interested in the giving and action of drugs, a classification under Action and Uses such as Purgatives, Sedatives, etc., would surely be more useful and stimulating. The manner is formal, and no attempt is made to pander to the natural distaste of the beginner for the jargon of medical terminology or the pompous Latin of pharmacy. To take a random example, the reader is told that Acidum Aceticum Glaciaic (Glacial Acetic Acid) contains 99 per cent. w.w. of acetic acid, crystallises when cooled to about 10°C., is an escharotic and destroys erythyrocytes. A formidable disguise when no mention is made of its household name of Vinegar or its excellence for dealing with wasp stings.

The book is meticulously detailed and accurate ; it is up to date, as the account of the basal hypnotics and the excellent symmary of vitamins bear witness. The tables of weights and measures and calculations for making percentage solutions will be much appreciated by the busy and harassed nurse.

This book is not suitable for solid reading by the individual, but can alone be recommended as a reference book for the many.

C. G. B.

Inhalation Therapy Technique. By W. E. COLLISON. Published by Messrs. Heinemann, Ltd. *Price* 5*s*.

THIS little book deals with a rather neglected branch of therapeutics. At present there is, so far as we know, no inhaler in the Hospital which fulfils the requirements laid down by Major Collison. This is a pity, since the results he claims are so good as to warrant investigation, all the more so since limited personal experience with admittedly inadequate apparatus has not impressed one by its successes.

As far as the book is concerned it is difficult to see how the subject could have been better approached or more clearly explained. Even those sufferers from an inferiority complex about machines and their workings must feel confident, after having once read the instructions, of their ability to superintend the running of the Collison inhaler.

In addition, a series of tables suggests the most satisfactory methods of treating the various diseases reputed to benefit from inhalations, giving the times of sessions and the particular drugs to be inhaled. It seems a pity that Major Collison should include with no appropriate punctuation to denote their origin long extracts from the writings of distinguished physicians which have appeared in the medical press and elsewhere. As these latter are included with due acknowledgment at the end, certain phrases appear twice over.

In all it is a clear and impressive account of the Collison Inhaler, which should be of especial service to the general practitioner minded to try these things for himself.

A Short Encyclopædia for Nurses. By EVELYN PEARCE. Published by Messrs. Faber & Faber, Ltd. *Price* 7*s*. 6*d*.

THIS book, originally published two years ago, is now in its second edition, greatly amplified and improved. It deserves its popularity among nurses studying for hospital and State examinations, and the trained nurse will find it useful for many years to come. It is concisely written and the information given under each heading is not too brief to be interesting. Students can rely upon it for reference, knowing that it contains a great fund of facts essential for a nurse to know, to be found quickly and without much trouble. All nurses in training would be pleased to have such a really useful book at so reasonable a price.

General Nursing Questions and Answers. By DORIS TAYLOR. Published by Messrs. Faber & Faber, Ltd. *Price* 4*s*.

THIS book is one for the bookshelf of the nurse who " crams " for examinations. Its title explains that it cannot replace a textbook, and for many students money spent on it would be wasted. In some cases the answers are very sketchy indeed and of little value, but it may be useful to some nurses who find this method of study helpful. For this reason it is worth while buying the book for the nurse's library—and those who study from it should read the introductory chapter carefully. It is the most useful part of the book.

Theory and Practice of Nursing. By M. A. GULLAN. Published by Messrs. Lewis & Co. *Price* 9*s*.

TO many senior nurses Miss Gullan's book needs no introduction. It is now in its fourth edition, and as a supplementary handbook for nurses attending staff lectures during

their training it is very sound. Nursing procedures are described with special reference to anatomy and physiology, helping the nurse to understand the reasons for the treatments ordered, rather than to work mechanically. From this point of view it may give many hints to Ward Sisters and other teachers of nurses. Some details of technique may be debated in different training schools. It is not usually thought necessary to use sterile apparatus and solutions for gastric lavage, nasal and œsophageal feeds, and our nurses may find these points confusing. The chapters on the nursing of medical diseases are excellent.

Anatomy (*The Thorax*). Part V. By C. R. WHITTAKER, F.R.C.S.E., F.R.S.E.

Medicine (*Diseases of the Nervous System*). Part V.

Bacteriology and Protozoology (*in Medicine and Public Health*). Part II. By W. R. LOGAN, M.D., F.R.C.P.E., D.P.H.

Pathology. Part I } Revised by JAMES MILLER,
„ Part II } M.D., F.R.C.P.E.

The "Catechism" Series. *Price* 1*s*. 6*s*. each.

SOME books are indifferent, others bad, and some absolutely shattering The whole gamut is here.

Anatomy lends itself with difficulty to compression for a cram series in the most expert hands. Treated as Mr. Whittaker treats it, it becomes incomprehensible. Lists of venous tributaries follow lists of arterial and nerve branches. As in the other books of the series, the information is sandwiched between italicised interrogatory and imperative sentences. Such a presentation does not render a collection of sketchy and haphazard facts any the more palatable.

The author of "Medicine," Part V, prefers, in this volume, to preserve his anonymity. He need scarcely have been so modest; a perusal of the book at least awakens the interest of the reader.

Some memories, it is true, would be better not carried into the examination room. "The commonest cerebral tumours are tubercle, gummata, and glioma, in the order named." For neither the grammar nor the accuracy would we vouch. Jacksonian epilepsy is distinguished from idiopathic as having always an organic origin; that part of the trigeminal nerve most commonly affected in tic douloureux is stated to be the supra-orbital branch of the ophthalmic division.

Only the scantiest references are made to pathological findings in the cerebro-spinal fluid. Lange curves and the significance of a fall in chlorides are not mentioned, but there is space to include "chills" as a possible ætiological cause of anterior polio-myelitis.

Both "Bacteriology and Protozoology" and the two volumes on "Pathology" contain much that is likely to be of value to the student. The first is a subject which lends itself, for examination purposes, more readily than the others to compression in this series. It is precise, authoritative, and carries conviction. The last two on Pathology are sober little volumes to which sober little students seeking ever shorter routes to the pass mark may turn for comfort.

Medicine for Nurses. By W. GORDON SEARS. Published by Messrs. Ed. Arnold & Co. *Price* 8*s*. 6*d*.

"MEDICINE for Nurses" may be said to have a two-fold purpose. As the author says in his preface, it is primarily intended for the nurse who is preparing for her examinations. For this purpose the book is admirable, particularly as regards clarity of expression and concise summarisation of facts. It should also be of great value to the trained nurse, more especially when she is engaged in private work, both as a book of reference and as a source of suggestions for the treatment of specific cases. Its practical value can scarcely be over-estimated, the arrangement of the matter being especially worthy of praise, and the tables at the end extremely useful. The diagrams are clear and the illustrations helpful.

It is disappointing that certain subjects have not been treated in greater detail. This is particularly felt in the section on angina pectoris. A fuller account of the earlier stages of the condition which a nurse should recognise would have been welcome.

The book, as a whole, is excellent, and any nurse would do well to purchase a copy.

Correspondence

The Pædiatric Department

To the Editor of the GAZETTE

SIR,—Your remarks in "Passim" about the need for an adequate supply of children's cots can be reinforced by the statistics of children attending the Department of Psychological Medicine. Dr. Cameron has, as everyone knows, been specially interested in the psychological aspects of children's diseases for many years, and in 1930 with his benediction, I think, the Department of Psychological Medicine started

what is usually called in these days a child guidance clinic, as a subsection of the Department, where psychological investigation and treatment of the more intensive kind could be done when necessary.

Our total new patients, excluding for statistical purposes those referred by Dr. Cameron and Dr. Hampson, now amount to over 250 a year, which, added to the very large number of new patients seen in the Children's Department itself, puts Guy's at the top of the list of all London hospitals for total attendances in the children's departments.

An additional fact of interest is that there are five doctors, two social workers, two psychometrists and a secretary engaged in part or whole-time work with children in the Department of Psychological Medicine. The work is both clinical and research, and is carried on with the aid of grants from the York Trust and the Rockefeller Foundation as well as with the funds that were raised by friends of the late Sir Alfred Fripp for a Fellowship in Child Psychology.

All this has to be done without any cot accommodation whatever, with the result that the opportunities for observation and treatment are unnecessarily limited. There is the additional fact that it is the only provision of its kind made at any general hospital in London.

Yours, etc.,
R. D. GILLESPIE.

16, Chester Terrace,
Regent's Park, N.W.

To the Editor of the GAZETTE

SIR,—I should like to support your appeal in "Passim," in the last number of the *Gazette*, for the enlargement of the Children's Department. I agree that this has too long been inadequate, and think that every effort should be made to take the opportunity now presented to us by the evacuation of Bright Ward. Personally, I had two cases in the two months' clerkship, and this was an experience which was shared by the majority of those who did the appointment at that time.

Yours, etc.,
S. M. WHITTERIDGE.

The College.

To the Editor of the GAZETTE

SIR,—The case put forward in the last edition of the *Gazette* for the future adoption of the old Bright Ward by the Pædiatric Department of the Hospital seemed to me to be so strong that I feel that the small weight of a student's opinion will count but little extra in the balance.

But, all other considerations being disregarded, from the student's point of view the extension of the Children's Ward is a need that has long been pressing.

We are so constantly told that the treatment of the sick child of the family is of paramount importance to the general practitioner, and have in practice been shown so little of the child in sickness, that we are tempted to disbelieve the statement altogether, and to class it among those aphorisms that spring so readily to the lips of teachers only to be cast later, as being unimportant in practice, into the limbo of the student's mind.

During my clerkship in the Children's Ward I think I am right in saying that I was considered lucky to have been the proud possessor of three cases in my two months. Several of my contemporaries, with much trouble, managed to acquire one case. How many of these cases were of much practical value to their clerks it would be hard to say. In a ward of such limited capacity it is only natural that a large proportion of the cases should be of the rarer types. The more commonplace, the more easily diagnosable, those of greater value in the daily practice, had to seek admission elsewhere.

In the Out-Patient Department we learn much that is useful, but of the child lying sick in bed our knowledge is of necessity fragmentary, and thus we are thrust upon the world with a very real weakness in our armour. Surely this is an opportunity for remedying the defect in future generations!

Yours, etc.,
B. W. HUNT.

Guy's Hospital,
S.E.1.

To the Editor of the GAZETTE

SIR,—I would like to express my agreement with the remarks that you have made on the insufficient number of cases available for the student in the Children's Ward. My own experience was that I had two cases during the whole appointment, and the ward was twice closed for a period of a week owing to the spread of infection, which could almost certainly have been arrested had there been a small isolation block available.

Yours, etc.,
C. S. DARKE.

Guy's Hospital,
S.E.1.

The Squash Court

To the Editor of the GAZETTE

SIR,—Some weeks ago you had occasion in "Passim" to comment on the inadequacy of one squash court to meet the demands of the Hospital, and the question was again raised in a letter signed by twelve members of the Hospital in your last number.

With winter, the need of another is greater, and a definite decision regarding the proposed enlargement of the Nurses' Home becomes even more necessary if advantage is to be taken of the Catering Company's generous offer of £200 to reconvert the old Fives Court.

We write to emphasize our need of two courts if the permanent residents of the College are to obtain exercise. Now that the chief obstacle, that of finance, has been overcome, we can surely hope that the Squash Club will shortly be allowed to proceed with the renovation of the Fives Court.

Yours, etc.,

Martin J. Harris. Anthony Ponder.
W. W. Cashmore. C. A. Lillicrap.
David Moir. Patrick Clarkson.

The Clinicals' Room.

To the Editor of the GAZETTE

SIR,—In a letter in the last number of the *Gazette* it was stated that the Catering Company had kindly offered £200 towards the rebuilding of the old Squash Court. This is quite correct and, although the offer was made over a year ago and was temporarily shelved in order that the Governors of the Hospital might decide in what direction the Nurses' Home is to be enlarged, yet no decision has been forthcoming.

The delay is to be regretted, in that the offer may not be repeated and also because the old court at present exists merely as waste space. £200 will be quite adequate to reconstruct it to size and shape of a standard court.

It is essential that the residents in the Hospital should obtain sufficient exercise, and in the present circumstances it is becoming impossible to do so, because of the increasing popularity of the game. To be certain of finding a vacant court, it is now almost always necessary to book three days ahead, during which three days a resident often finds his chances of playing at that particular time becoming more and more remote; the court has to be cancelled, and there is no alternative but to see if the court is vacant within the next few days. It would be a happy choice if one court were put aside solely for the use of the residents and the Staff of the Hospital, so that they could at least obtain some exercise in this never too healthy institution.

The Squash Club now has a large fixture list and, on the whole, has had two rather successful seasons. We have been treated so well in our "away" matches that we cannot help feeling a little embarrassed when we realise the little we do in return. A match of five-a-side usually lasts about three hours, during most of which time those of our opponents who are not playing are expected to stand shivering in a remarkably chilly gallery until the match is finished. Needless to say few find the time or the inclination to avail themselves of this opportunity. Two courts would adequately solve this problem, and would thereby leave more time for others in which to play. At present, with one court, the playing of a squash match at Guy's necessitates the booking of the court for a complete evening.

Yours, etc.,
C. A. BOUCHER,
Capt.,
Squash Racquets Club.

Guy's Hospital,
S.E.1.

To the Editor of the GAZETTE

SIR,—I read with interest the brief letter which appeared in the last *Gazette* on the subject of a new Squash Court. I would like to add my name to all those at the end of the letter.

Something like 150 or more players enter the Squash Court every week, and in order to give them a chance of playing, the time limit is, in the popular hours for play, half an hour. This limit may be considered by the medium player as adequate. In the case of the slightly better player it is certainly impossible to finish a five-game match in the time. If the match cannot be finished, much of the enjoyment goes, and if the players stop at 2—all, the better player cannot be seen. Thus often one cannot judge one's own standard, and the Squash team suffers accordingly. A new court would remedy this.

Squash is not only excellent exercise, it is a very enjoyable social game, and the more matches played the more in touch with the game one becomes. I feel that those of different years in the Hospital are far too separate; it is through sport and art that this can be remedied. Here is one of the most popular sports in the Hospital, actually in the Hospital grounds.

And what of the nurses? No doubt many would like to play—and why not? They cannot because there is not room for them. The court is

too crowded. One has to book a court at least two days before playing, and this is often not convenient. There are many at the Hospital who only receive notice of free time an hour or two before; they cannot play, for the courts are booked.

There are probably over 200 players at the Hospital. In fact, more play squash than any other game. It is therefore reasonable to expect a little attention to be paid to their needs.

It is doubtful if there will ever be a chance of getting another court at the Hospital for the space is getting limited. Squash is becoming more popular every year; soon there will be 400 players at Guy's! And there may be only one court.

It will be a very unfortunate position, for Guy's squash players will have to join other clubs and will play for those clubs in preference to Guy's.

It is earnestly to be hoped that the new court will be forthcoming and will be completed by next season. It is a very generous offer of the Catering Company, and every student ought to feel very grateful.

Yours, etc.,

R. GILBERT HARRIS.

Hon. Sec., Squash.

Dr. Duffett and Mr. Pantin

To the Editor of the GAZETTE

SIR,—Needless to say I accept Dr. Pantin's explanation that he telephoned to me. I regret that the non-delivery of the message and the non-confirmation of the telephone message by letter was the cause of my communication to the *Gazette*.

Yours, etc.,

H. DUFFETT.

P.S.—I am writing personally to Dr. Pantin.

Fractures and Massage

To the Editor of the GAZETTE

SIR,—I have read with interest "Some Remarks on the Treatment of Fractures," by Mr. J. S. Batchelor, and, with your permission, I feel some knowledge of the further advance in technique since those prehistoric days of "skin polishing" would enlighten the readers of his article, why "massage and passive movements" in proper doses have withstood so many ages, and provided the specialist in massage is not limited by the surgeon, will continue to have its place in the after-treatment of many fractures.

There can be no question that axial alignment is, first and foremost, most necessary; that fixation by accurate moulding of a plaster or other means described is essential; that "active movements" are the key to success in restoration of function. My experience has, however, proved that massage producing temporary comfort, scorned by Mr. Batchelor, does not prolong the sense of incapacity, but enables the introduction of active contractions without trembling of the muscles within 12 hours of reduction.

Watch an injured dog; his instinct is to lick and so soothe the pain. Similarly the fly on the window whose wings have been hurt strokes them gently with its legs. Chinese as far back as 3000 B.C. employed massage to soothe pain; Japanese, Greeks, Romans, Turks, Egyptians, Hindoos and Persians have always practised the art of healing by some forms of rubbing. Asclepiades, a Greek physician in 128 B.C., used rubbing combined with active movements, and up to the present day Massage, its principles and practice, is well worth study by those who set out to hasten the recovery of fractures and minimise the suffering of the patient.

Yours, etc.,

HESTER S. ANGOVE,

Sister in Charge of the Massage Dept.

Guy's Hospital,
S.E.1.

The League of Nations

To the Editor of the GAZETTE

SIR,—Mr. H. B. O. Cardew apparently has no doubts about the crisis and how to deal with it. I find myself able to agree with him in just one of his statements. "The League of Nations is a menace to the peace of the world," and this because by its constitution it tends to stabilise world conditions in favour of the "Haves" and against the "Have Nots." Certainly, however, the masses of the nations who compose the "League" don't realise it, and have a genuine faith in its aims.

When, however, we come to Mr. Cardew's alternative of huge armies and navies, I marvel. Napoleon is quoted as saying that "War never settles anything." Many of us, who served with growing disillusionment throughout the last one, go much further and say war is a swindle—a common form of the confidence trick, and the ordinary decent citizens of all nations are the "mugs."

It is becomingly increasingly obvious in many directions that the "Haves" among the nations

must consent to a fairer division with the "Have Nots," though courage is needed to make even the first gesture. Witness the storm in certain sections of press and parliament over Eden's tiny Somaliland offer. If the world has not learned its 17-year old lesson, and war comes, I don't see that it will matter a pin if, as Mr. Cardew says, "we make certain of winning it." Whether we do or don't, winners and losers alike will both sink deeper than ever into the mud of chaos. The only gainers will be a few individuals in every country. Then perhaps the survivors may at last try the method urged for the last 2,000 years by the World's Greatest Teacher. My own belief is that even now the "common" man would be willing to try it in his millions, but the average government hasn't the faith. It fears to be thought weak.

Yours, etc.,

F. J. LLOYD.

1, Sinclair Road,
Kensington, W.14.

To the Editor of the GAZETTE

SIR,—In days gone by, when the world was in a state of economic equilibrium, there were four great methods of keeping the population within reasonable limits. They were: The Wild Beast; Famine; Pestilence, and War.

In the course of many centuries the wild beast has been eliminated—or nearly so. Famine is of rare occurrence, and confined to districts which do not greatly concern the supposedly important civilisations of the West. The same applies to pestilence, and we, in our unphysiological, sentimentally chosen profession are doing our best to eliminate it altogether.

There remains war. And now, shortsightedly enough, we are hoping to avoid what is assumed to be a catastrophe. Why?

There are two possible reasons: One, the fear that we ourselves will suffer some personal inconvenience, or even lose our own lives. The other, and more compelling reason is the waste of life and material, civilian as well as military.

Is this in truth so catastrophic?

There is no one who denies that the world needs some fundamental change, but, with one notable exception, all the leaders of to-day are applying the methods of a man who, wishing to save a favourite old coat, consistently sprays it with "Flit," regardless of the fact that his whole wardrobe is gradually becoming infected with moth.

Mr. H. G. Wells, in his great book, "The Shape of Things to Come," found it necessary to destroy a large section of the population before he could reconstruct his new world. He postulated a new disease as his agent.

Is this, then, less terrible, less horrifying than a great war?

In either case, we, as individuals, would suffer, and memories and records have left us in no doubt how terribly.

But if by such drastic surgery the world as a whole will regain its sanity, what right have we to sentimentalise?

Yours, etc.,

J. MAURICE LEA.

Brambletye,
Kingswood,
Surrey.

(*This correspondence is now closed.*)

Guy's Hospital Biennial Dinner

THE Guy's Hospital Biennial Dinner will take place at the Connaught Rooms, Great Queen Street, W.C., on Friday, November 15th, at 7 for 7.30 p.m., when Mr. Arthur W. Ormond will preside. All Guy's men with medical or dental qualifications are eligible to attend. Forms of application for tickets will be sent out in the near future, and it is hoped that there will be a large attendance. The price of the ticket has been reduced to 12*s.* 6*d.*

The following Lectures and Demonstrations of Cases will be given in the Clinical Theatre on Friday, November 15th, and Saturday, November 16th, 1935:—

Friday, November 15th—

12.0—12.45 p.m., Dr. C. P. Symonds—"Head Injuries."

2.15—3.0 p.m., Dr. A. F. Hurst—Demonstration of Medical Cases.

3.15—4.0 p.m., Mr. C. Lambrinudi—"Pain in the Back."

4.0—4.45 p.m., Tea.

4.45—5.30 p.m., Mr. Frank Cook and Dr. P. M. F. Bishop—"Hormone Therapy in Gynæcology."

Saturday, November 16th—

10.30—11.15 a.m., Mr. E. C. Hughes—Demonstration of Surgical Cases.

11.30 a.m.—12.15 p.m., Dr. H. C. Cameron—"Common Disturbances of Digestion and Nutrition in Childhood."

Old Guy's men who wish to take advantage of these lectures and demonstrations, which have been arranged for the benefit of those attending the Biennial Dinner, are requested to send in their names to the Sub-Dean, Guy's Hospital Medical School, London Bridge, S.E.1.

Sport

Rugby

Guy's v. Coventry

ON SATURDAY, September 28th, Guy's visited Coventry and were defeated by 4 placed goals and 3 tries (29 points) to 2 tries (6 points).

The home side, who were at full strength, had an exceptionally good pack, much heavier than the Hospital, and it was in this department where Coventry had a decided advantage. Guy's were handicapped by the absence of their hooker, P. K. Hopkins, who was injured the week previously, but nevertheless they stuck to their task and put up a much better performance than the score suggests.

Clarke and Giles, the Coventry half-backs, were in excellent form and had a wonderful understanding. Receiving the ball from most of the scrums, Giles made full use of his opportunities, and was a constant menace to the Hospital defence.

The ground was in very good condition when the home side kicked off under ideal conditions, and, after five minutes' even play, Guy's scored an unexpected try. Receiving the ball near midfield, Wright shook off a tackle and raced up to the full-back before sending Dick in for a try near the corner.

A good movement between the threes looked dangerous, but Stewart failed to accept a pass from Dick and immediately afterwards a penalty against Stanyon-Jaques sent Guy's back to their 25.

Coventry were now exerting great pressure, and, after Guy's had touched down, Clarke carved out a fine opening for Mayo, who scored easily behind the posts, R. Harris adding the goal points.

Mayo very nearly scored from the kick-off, but he was brought down within 10 yards of the line and, as he failed to play the ball, Guy's were awarded a penalty, but the full-back returned it with a fine kick to the Hospital's 25.

Very few minutes passed before Coventry added two further tries in quick succession. First Clarke forced his way through to send in Harris for an unconverted try, and from the kick-off the same player, after missing a pass, kicked ahead and followed up to score another try, which R. Harris converted.

For a time Guy's held their own and, following a scrum infringement, Dick found touch near the corner flag. Guy's pressed hard and, following some loose play, the ball was kicked over the line, but Frazer had bad luck when, following up with a clear run in, he saw the ball bounce into touch.

Coventry missed a glorious chance when Giles cut through to within a few yards of the line and sent out a long pass to the right. Here were three men waiting with nobody in front, but, luckily for Guy's, they all missed.

A free kick to Guy's relieved the pressure for a time, but near half-time Clarke found a gap and ran in for an unconverted try.

Following the interval, Kark took over the duties as hooker and Guy's certainly got more of the ball than they did in the first half. However, the Coventry wing forwards and Giles were in great form and were on top of the ball before the backs had a chance.

As the result of short passing between the backs and forwards, the home side swept aside the opposition and Giles had an easy passage before crossing for a try under the posts, to which he added the goal points.

Guy's tried hard to set the backs going, and their persistency was rewarded when Wright followed up a penalty and raced on to send in Dick for a good try near the corner flag. Kark made an excellent attempt to kick a goal, and only just missed.

After this Guy's had to defend desperately, and Halamandres saved a certain try when he took the ball from a forward who was in the act of touching down.

Frazer relieved the situation for a moment or two when he dribbled splendidly for some forty yards. Then the Hospital started another three-quarters movement, but unfortunately it broke down and Coventry swept down the field *en masse*, and Mayo completed the effort by registering a try, which Purchas converted.

The Coventry forwards were now masters of the situation, and quickly added another unconverted try through Clarke, who was outstanding.

In the closing minutes Guy's rallied, but could make little headway against a cast-iron defence.

It was hard luck for the Hospital to be called upon to face one of the most formidable combinations in the country so early in the season; most of the Coventry side had represented Warwickshire against the All Blacks the week previously and were at the top of their form.

Under the circumstances Guy's did very well, and, if they can introduce some extra weight to the pack, should improve as the season advances.

Team.—C. Halamandres; C. G. Wright, R. C. S. Dick, I. McD. Stewart, R. M. de Gregory; J. van A. Steytler, K. A. Stanyon-Jaques; J. L. Harrington, M. R. Kark, A. J. Drew, E. B. French, E. R. Davies, W. F. Frazer, S. M. Whitteridge, C. S. Darke (Capt.).

Entry of Students, October, 1935

Medical

Name	*School or College*	*Year*
Adkins, T. A. H.	Grammar School, Elland, Yorks.	1st M.B.
Amusarasundora, C.	Bangkok, Siam	1st M.B.
Astbury, J. S.	Rugby and Christ Church, Oxford	4th Year.
Beaton, C. L.	Finchley Catholic Grammar School	1st M.B.
Campbell, F. W. A.	University College School	1st M.B.
Dawe, E. B.	Roan School, Blackheath	1st M.B.
Duberry, R. A. H.	Whitgift Grammar School, Croydon	1st M.B.
Evans, T. G.	University College, Cardiff	2nd Year.
Fisher, M. G.	Merchant Taylors' School	Pre-Medical.
Foster-Smith, G. C.	Felsted School	1st M.B.
Franey, R.	Dulwich College	1st M.B.
Freeman, H.	Colfe's Grammar School	Pre-Medical.
George, K. O.	Gresham's School, Holt	1st M.B.
Gill, R. A.	Essex County High School, Ilford	1st M.B.
Hallam, R. C.	St. Lawrence College, Ramsgate	2nd M.B.
Hammond, G. T.	Haberdasher Askes School, Hampstead	1st M.B.
Handley, L. H. G.	Sherborne	1st M.B.
Hansel, C. E. M.	Bedford School	1st M.B.
Harrington, R. F. E.	University of Liverpool	4th Year.
Harvey, P.	Davenant Foundation	2nd Year.
Henry, J. P.	Sidney Sussex College, Cambridge	4th Year.
Horan, D. G.	Malvern College	1st M.B.
Hughes, R. H.	Wrekin College	1st M.B.
Hunt, J. N.	Royal Masonic School, Bushey	2nd Year
Hunter, R. J.	Hurstpierpoint College, Sussex	1st M.B.
James, W.	Llandyssul Grammar School	1st M.B.
Kennedy, C. C.	Tonbridge School	1st M.B.
Johnson, B. D.	Wimbledon College	2nd Year.
MacDonald, J. A.	County School for Boys, Gravesend	1st M.B.
Macintosh, C. N.	Dollar Academy	1st M.B.
McLintock, C. L. T.	Epsom College	2nd Year.
McFall, G. E.	St. Olave's Grammar School	2nd Year.

Name	*School or College*	*Year*
McLean, V. J.	Alleyn's School, Dulwich	1st M.B.
Merrick, H. P.	Blundell's School, Tiverton	1st M.B.
Messenger, J. S.	St. Lawrence College, Ramsgate	2nd Year.
Mobbs, E. C.	St. Olave's Grammar School	1st M.B.
Moore, C. G. W.	Lancing College, Sussex	1st M.B.
Moore, R.	Northern Polytechnic	2nd Year.
Muntarbhorn, S.	Manchester Grammar School	1st M.B.
Pegum, J. S.	Beaumont College	1st M.B.
Phillips, H. J.	Welsh National School of Medicine	1st M.B.
Poulton, E. M.	Rugby and Balliol College, Oxford	4th Year.
Price, G. C.	Malvern College	2nd Year.
Rawlings, K. O.	Eltham College	2nd Year.
Rees, R. J. W.	East Sheen County School	1st M.B.
Reeve, E. B. G.	Oriel College, Oxford	4th Year.
Rendell-Baker, L.	Ashville College, Harrogate	1st M.B.
Robinson, E.	St. Peter's, York	1st M.B.
Rowley, H. A.	Wyggeston Grammar School, Leicester	2nd Year.
Sewell, W.	St. Dunstan's College	1st M.B.
Smith, S. H. L.	Winchester and New College, Oxford	4th Year.
Smith, E.	Jesus College, Oxford	2nd Year.
South, R.	Dulwich College	1st M.B.
Stott, H.	Peterhouse College, Cambridge	4th Year
Taylor, G. W.	Bedford School	1st M.B.
Watson, J.	Jesus College, Cambridge	4th Year.
Watson, W. R.	Wellingborough College	1st M.B.
Watts, C. H.	Sherborne	1st M.B.
Wetherall, S.	University of Manchester	2nd Year.
Wildman, J. H.	Borden Grammar School, Sittingbourne	2nd Year.
Wills, J.	Epsom College	2nd Year.
Wright, D. H.	Northampton Town and County School	1st M.B.

Dental

Name	*School or College*	*Year*
Adair, C.	Brisbane, Australia	4th Year.
Allen, R. D.	University of Liverpool	Pre-Medical.
Baumann, D.	Haberdasher Askes School, Hampstead	1st Year.
Bevis, D. C.	Sherborne	1st Year.
Bird, C. A. K.	Kingswood School, Bath	Pre-Medical.
Blackwell, J. K.	Merchant Taylors' School	Pre-Medical.
Burgess, D. W.	St. Marylebone Grammar School	1st B.D.S.
Cockburn, H. V.	St. Paul's School	1st Year.
Cox, B. M.	St. Lawrence College, Ramsgate	1st Year.
Cranfield, J.	Hitchin Grammar School	1st B.D.S.
Dunn, W. F.	Dover County School	1st Year.
Everall, J. D.	King's College School, Wimbledon	Pre-Medical.
Finnegan, D. P.	Epsom College	1st Year
Green, R. C.	Highfield College, Leigh-on-Sea	Pre-Medical.
Gunn, A. W.	Modern School, Salisbury	1st Year.
Halamandres, A.	Houghton College, Johannesburg	Pre-Medical.
Hall, H. A.	Manchester Grammar School	1st Year.
Hancock, J. G.	King's College School, Wimbledon	1st Year.
Hilton, E. A. G.	St. David's County School, Pembroke	1st Year.
Hoar, R. F.	Plymouth College	1st Year
Jackson, W. E.	Wyggeston Grammar School, Leicester	1st Year.

Name	School or College	Year
James, R. G.	Abingdon School	1st Year.
Jeffery, P. E.	Leatherhead	1st Year.
Keeler, R. A. E.	High School for Boys, Southend-on-Sea	1st Year.
Lewis, R. N.	Llandovery College	1st B.D.S.
Mackenzie, D.	King Edward VI Grammar School, Retford	1st B.D.S.
Martin, E. J.	Beckenham and Penge County School	1st Year.
Mitchell, I. A. M.	Bryanston School, Blandford	Pre-Medical.
Morrell, R. C. D.	Epsom College	1st Year.
Pierce, J. O.	University College, N. Wales	Pre-Medical.
Ralston, G. E. A.	Bishops Stortford School	Pre-Medical.
Ratcliffe, J. H.	Oakmount School, Arnside	Pre-Medical.
Rhodes, P. I.	Midhurst Grammar School	1st Year.
Ritchie, J. C.	Brentwood	Pre-Medical.
Rugg-Easey, D. L.	Latymer Upper School	1st Year.
Sharp, R. F. A.	Bishops Stortford School	1st Year.
Simpson, S. N.	City of London School	Pre-Medical.
Staple, P. H.	Leighton Park School, Reading	1st B.D.S.
Stares, F. N.	Swansea Grammar School	1st Year.
Stone, A.	Haberdasher Askes School, Hampstead	2nd Year.
Titford, K. R.	Colfe's Grammar School	2nd Year.
Vale, A. T.	Derby School	1st B.D.S.
Whiteley, E. D.	Clifton College, Bristol	Pre-Medical.
Wilks, M.	Bradfield College, Berks.	Pre-Medical.

Hospital Information, etc.

Notices

Guy's Hospital Medical School

MEDICAL GERMAN

A series of classes in German, specially designed for medical students, will be held in the Medical and Surgical Theatre of St. Bartholomew's Hospital Medical College on Tuesdays at 5.30 p.m., beginning on Tuesday, October 22nd, 1935, by Mr. R. A. Fitzaucher, M.A.

By the courtesy of the authorities of St. Bartholomew's Hospital Medical College, those Guy's students who wish to do so are invited to attend the above classes, which are designed for beginners as well as for those who have some previous knowledge of German. No fee is charged, but those who attend are expected to contribute 10*s.* 6*d.* a term to some charity named by Mr. Fitzaucher.

Guy's students who wish to attend should give in their names at the Medical School Office.

T. B. JOHNSTON, *Dean.*

The Musical Societies Orchestral Concerts

The orchestra of the Society are giving a concert on Thursday, 24th October, with a repeat performance on Friday, 25th, in the Physiology Theatre. The soloists are Augustus Milner (baritone) and Herbert Templeman (violin). Tickets are 4*s.*, 2*s.* 6*d.*, and 1*s.*, and may be obtained from the Medical School, W. Howard Clarke, R. C. Ponder, Sister Dental, W. I. N. Forrest; Sister Johnson, The Nurses' Home; Miss Vint, The Massage Department.

A large proportion of the tickets have already been sold, so book early to avoid disappointment.

Papers by Guy's Men

P. N. B. Odgers. The formation of the various valves, the foramen secundum and the septum secundum in the human heart. *Jour. Anat.*, 1935, lxix, 412.

G. B. Dowling and Another. (1) Mycosis fungoides; (2) Morphœa. *Proc. Roy. Soc. Med.*, 1935, xxviii, 1525, Sect. Dermat.

Nils L. Eckhoff. Diseases of the colon. *Clin. Jour.*, 1935, lxiv, 410.

P. M. F. Bishop. Kraurosis vulvæ treated with œstrin. *Clin. Jour.*, 1935, lxiv, 426.

Arthur F. Hurst. Richard Bright (1789-1858); British Masters of Medicine. *Med. Press and Circular*, 1935, cxci, 292.

Marriage

CARTER—WORTHINGTON.—On June 20th, 1935, Charles Worthington, M.B., B.S., to Helen Audrey Carter, second daughter of Rev. Henry and Mrs. Carter, at Chittlehampton, Devon.

Death

PEDLEY.—On September 21st, 1935, at Peacehaven, Sussex, Samuel Edward Pedley, M.R.C.S., L.R.C.P., L.D.S. (Eng.), of 43, Welbeck Street, W.1.

EDS. { P. W. C. / M. A. P.

GUY'S HOSPITAL GAZETTE

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PASSIM

IT is time that we said a word in congratulation of the Clubs' Union. The Pavilion at Honor Oak Park, which has been undergoing extensive alterations and additions, is now completed. The accommodation has been greatly increased; there is twice the previous amount of room for home teams, and it is possible to accommodate more than eighty people in the home changing room. There are additional dressing rooms for visitors, so that two visiting rugger teams, a hockey team and a soccer team can all be accommodated at once. The bathrooms, showers and lavatories have been improved beyond recognition, and on the ground floor the size of the dining-room has been doubled. The cost of these additions, which has been upwards of three thousand pounds, has been met by the funds of the Clubs' Union, together with a most generous gift of eight hundred pounds from that supporter of good causes, the Catering Company, to whom we are again indebted.

The results of the drainage scheme which so occupied the minds of the Clubs' Union two years ago are now beginning to be felt, and there is an

The Pavilion, Honor Oak Park

astonishing improvement over the state of the ground as it sometimes was in previous winters. Further, the plans for the new stand, to replace that which was burnt down a few months ago, have just been passed, and as we go to press instructions have been given that the erection of a new stand is to be started. This is to be smaller than the old one, but will accommodate between four hundred and fifty and five hundred. It is hoped that it is to be completed by January. With the added acreage, which now allows for two rugger teams, a hockey team and a soccer team to play against respective opponents at once, the hard tennis courts, the modernised pavilion and the new stand, this will be undoubtedly one of the finest grounds in London, and we feel that great credit is due to the Clubs' Union for the various schemes which they have succeeded in putting through.

IT has always seemed to us that patience is the greatest of the virtues. Faith, hope and charity are well in their way, no doubt, though as virtues the first two seem a little exogenous, and hope, at any rate, may sometimes even smack a little of intellectual dishonesty. Charity, indeed, must come high among the virtues, but what of patience? To all those who have sat on committees or dealt with the psycho-neuroses the value of possessing it and the difficulty of achieving it must be manifest. And it is of lack of patience that we stand accused.

We have spoken of squash courts and chatted of children's departments. We have urged this reform and that with all the zeal and impatience of the armchair critic. We have appealed to the higher centres for information as to the plans for improving the children's ward and reconstructing the old fives court. The higher centres have told us to be patient, and we must acquiesce. The idea of improving the children's department has been in the minds of the Governors for years, and is exercising them still. The question of enlarging the Nurses' Home is a complex and difficult one. Both are causing consternation in the governing cortex. All that can be done will be done. Stay your hands, correspondents and complainants, and all shall be revealed to you in time, perhaps in about six weeks. It is unlikely that the old fives court will ever be available for squash, and the probability is that, whatever the difficulties, we shall have to seek a site elsewhere. It is not for us to say more. In the meantime cultivate faith and hope if you will, charity if you can, and patience because you must.

WE have referred before to the great loss that the Hospital has sustained in the departure of Dr. Ryle for the Chair of the Regius Professorship of Physic at Cambridge. The University Press is filled with paragraphs of welcome for its new Professor, and we at Guy's know that he will fill that distinguished post with great ability. We publish elsewhere in this number Dr. Ryle's farewell lecture, with a strange sinking feeling that it may be the last communication from him that we shall have the good fortune to put in print. We wish him every success and hope to hear more of his teaching, even if it be at second-hand.

A CORRESPONDENT writes :—

"It was announced a few days ago that Mr. Charles Brewer has been appointed Assistant Director of Variety at the B.B.C.

"Many Guy's men will remember Charles Brewer. He entered Guy's in September, 1913. His father was Dr. (later Sir) Herbert Brewer, organist of Gloucester Cathedral. Charles Brewer was filled with a passion for music of a less high-brow order. In the chemistry and physics laboratories and the biology laboratory, he was often found entertaining his friends with a topical song. He was extremely expert at blowing water down one's neck with a wash-bottle.

"Brewer passed the 1st M.B. examination in 1914. He had joined the Artists' Rifles and left Guy's at the beginning of the war. After the war his family wanted him to return to medicine, but he would have none of it. He said afterwards that his heart was not in it.

"For a time he went on the halls doing songs at the piano. After various musical interludes he was appointed to a job at the B.B.C. in the provinces. Later he came to London. Now he is one of the high lights at Broadcasting House.

"All Guy's men, especially those who recall his cheery personality, will wish him the best of luck in his job of providing light entertainment for the world."

WE have noticed for a week or so a uniformed official in the front quadrangle of the Hospital who presents all who enter in motor cars with a ticket from a book. This is no part of a scheme to promote the Hospital welfare through a lottery, but, we found on inquiry, a plan to keep out undesirables. These include those who use the Hospital as a parking-place while at their business premises close by, and students of the Medical and Dental Schools. Henceforth the regulation that only members of the Staff shall use this space is to be rigorously enforced. For some years past it has not escaped our notice that on those days when visitors come to see their relatives at this Hospital for the sick poor, the quadrangle is congested with such a display of cars as can hardly be seen except at Roote's. Now that there is to be someone in attendance we feel that a small toll might not inappropriately be levied on those

who use this parking ground. With such a charge one might thus anticipate a yearly income reaching well into three figures, which might go either towards a new squash court or to improving the Children's Department.

THE Biennial Dinner is to be held at the Connaught Rooms, Great Queen Street, Kingsway, W.C., on Friday, November 15th, at 7 for 7.30 p.m. Mr. A. W. Ormond will be in the chair. We publish elsewhere a list of those who have already accepted invitations, and urge those who have not already done so to write to the Secretary, Dr. Geoffrey Marshall, 45, Wimpole Street, W.1.

WE have been asked to draw attention to the "Help Yourself Annual," published by the Stock Exchange Amateur Dramatic Society, which is produced yearly with the object of assisting hospitals and charitable organisations. This is sold at the price of half a crown, and contains numerous cartoons, short stories and items of historical and topical interest. The most remarkable feature, however, and that most extensively advertised, is the nature and number of the prizes that are offered for a competition. In previous years, this competition has been in the nature of a lottery, but on this occasion, owing to the Lotteries Act of 1934, merit as well as chance plays a part in the distribution of the prizes. The prizes themselves vary from a wonder home, replete with every domestic article of convenience and utility, with furniture to be chosen by the winner, to a bottle of *creme de menthe*; from Morris motor cars to a glass of wine and a toothpick every weakday (*sic*) for two months; from a week-end for two in Surrey to a Scotch haggis. There are nearly 3,400 prizes, so if you don't care for kippers you may get a bottle of whiskey.

AMONG the recent advances that come to us from abroad we are interested to read the considered judgment of Professor Loeffler that Jewish blood may be used for transfusion purposes on behalf of German patients without risk of dearyanisation. We understand that Professor Loeffler has delivered this scientific pronouncement lest there should be delay in transfusing a German patient in the event of only a Jewish donor being available. We proffer our congratulations on a clarity of thought which enables scientific considerations to be thus freed from prejudices, and hope that it will remove any needless anxiety that has hitherto been shadowing the lives of those who may have German relatives who are in need of blood, as well as a pound of flesh.

Some Remote Effects of Syphilis

Clinical Lecture delivered at Guy's Hospital on Friday, 20th September, 1935, by John A. Ryle, Esq., M.D.

GENTLEMEN,—It is exactly 25 years since I entered the wards and began my clinical education. I shall always count it one of the happiest things in my life that Guy's was my nursery and has remained my school. It is impossible for me to estimate, as I take my departure, how much I owe to my training here—to my teachers, to my colleagues, to my registrars and house-physicians, to my clinicals and ward-clerks, and to the sisters and nurses who have so loyally worked with me. I am indebted, too, to a long line of Guy's patients whose clinical lessons linger in the mind.

Now, a quarter of a century is a convenient span to survey in retrospect if we seek to discover evidences of progress. The advancement of medical science proceeds for the most part tentatively and slowly, and confronted, as we are, from day to day by cases or diseases in the wards which are still so baffling and some of which we are still so little able to assist or cure, we may often be excused those moments of despondency which come to all of us. Directly, however, we take the longer view we begin to appreciate how sure and steady progress has been, and how greatly medical science and art have, in the last few decades especially, contributed to the betterment of human life and happiness.

When I entered the wards, rickets was rife among the Borough children, and a rickets leading to gross deformities which you now rarely see. Summer after summer took its toll of infant life with serious epidemics of diarrhœa. A few beds were still reserved in every medical ward for cases of typhoid fever, a disease which you may not now see before qualification, and—unless you go abroad—but rarely afterwards. Acute rheumatic fever and chorea were prevalent. Chlorosis was a common disease in the wards and medical Out-Patients. The graver ravages of alcoholism in its chronic, crippling stages were common, and Saturday night in the Front Surgery kept us busy with the victims of the acuter stages. We had no insulin with which to treat our diabetics, and no liver preparations for pernicious anæmia. The microcytic anæmias of women and their satisfactory correction with large doses of iron were not recognised. Cases of exophthalmic goitre were rarely operated upon because the mortality was prohibitive. Abdominal and orthopædic surgery and other branches of special surgery and

anæsthesia were all less safe and efficient than they are to-day.

Here are groups of diseases which public hygiene and better therapeutics have in this short space of time to a large extent abolished, diminished or ameliorated.

If we turn from treatment to diagnosis, it may interest some of you to know that when I entered the wards X-rays, while in general use for bone disease and injuries, were only beginning to be serviceably employed in connection with the alimentary tract and thoracic diagnosis; that pyelography and cholecystography were unheard of; that the estimation of blood-sugar and blood-urea, and a host of other valuable bio-chemical methods were not yet familiar to us; that psychological medicine in its present organised state and in the hands of trained experts was unknown.

It is, however, my special purpose to remind you to-day of some facts relating to one of the most important of all human diseases, one most potent for harm throughout the tissues of the body, and capable of transmission to the second generation, but one which, if diagnosed early and treated systematically, is now among the most curable.

When I was a ward clerk there was no special department for venereal diseases. At Surgical Out-Patients and in the Skin Department, however, we saw numerous examples of syphilis in its active primary, secondary and tertiary stages. All of these are less frequently seen to-day, and the tertiary lesions are particularly scarce. Schaudinn discovered the spirochæte only two years, and Wassermann described his reaction only one year before I became a medical student. Ehrlich made his important discovery of salvarsan in the same year in which I started my clinical work, and I well remember helping my house-physician to administer it intravenously with a cumbersome apparatus and diluted in one pint of fluid.

To-day, having in my wards some cases illustrating the later consequences of syphilis, I propose that we consider these. Unless you make a point of frequent visits to the Annexe, these late stages of the disease are the only ones you are likely to encounter in the course of hospital or private practice. Gummata of skin, bone and viscera have become rarities. You should study the specimens and wax models in the Museum to appreciate the disfiguring or disabling ravages and the many types of cutaneous lesion which syphilis is capable of causing, but which have all been made infrequent by modern methods of diagnosis and treatment.

Because, however, some patients have the misfortune to acquire inconspicuous primary lesions, or to receive inadequate treatment in the early stages, we still see cases of central nervous, cardio-vascular and visceral disease developing ten, fifteen, twenty or more years after the primary infection. With tabes dorsalis and aortitis we reckon that there is usually a latent period of ten to fifteen years between exposure and the development of clear clinical manifestations.

The diagnosis of these late pathologies may be easy, but in their early and more tractable stages they may call for a very careful history, a very close clinical examination, and, above all, a constant recollection of the possibility of syphilis as a cause of symptoms, even, at times, when syphilis may seem a most unlikely explanation. Remember that the indications for a blood-Wassermann test or a lumbar puncture are, in the first instance, clinical; we cannot employ these tests as a routine; it would be bad medicine if we were to do so.

I have brought here, for you to examine after the lecture, specimens illustrating some of the particular consequences of syphilis which we are about to discuss, and others to remind you of its earlier phases and appearances. There are wax models of primary sores, secondary rashes, Hutchinsonian teeth and other relics of congenital infection; there are other pathological specimens illustrating syphilitic damage to the liver, the heart, and the aorta. I had hoped to show you a small boy with congenital syphilitic disease of the liver, but improvement with treatment and the claims of hop-picking have made him inaccessible. One of these specimens (a thoracic aneurysm compressing the recurrent laryngeal nerve) exactly illustrates symptoms and signs which are demonstrable in my second case.

Let these specimens and models serve to remind you that you can never make enough use of the Post-Mortem Room and the Gordon Museum. Outside the wards there are no departments more useful to the training of the clinical eye. The mind's eye should ever be visualising at the bedside what might be revealed elsewhere. Pathological insight and imagination are essential to the development of diagnostic skill.

Our first case is that of a man aged 52, a naval pensioner. He was admitted for pains in the chest, head and abdomen, for vomiting, and for unsteadiness in walking. He has also had a solitary attack of hæmaturia, for which no explanation is at present forthcoming. He has many other symptoms, and we cannot but feel that a part of his trouble is psychological; he has had much worry and a deal of grief in his life, but that he also has organic disease of his central nervous system there can be no real doubt. I would draw your attention, first of all, to his facial appearance, which I believe to be diagnostic.

Apart from a certain fixity of expression, you will notice that he has a striking wrinkling of the forehead. But it is not the ordinary wrinkling of advancing years, or of worry, not the more vertical furrowing which accompanies the frown of annoyance or eye-strain. If you look closely you will observe that it is an *upward* wrinkling, with a number of closely parallel and horizontal furrows. It is due to an over-action of the frontalis muscle, compensating for a slight degree of bilateral ptosis of the eyelids.

The rest of our physical examination can be summarised by saying that he shows, as you see, a well-marked Romberg's sign, and absence of the right knee-jerk. Other tendon responses are present, but sluggish. His pupillary reactions are normal. Thirty years ago—before the days of serological diagnosis and arsenical treatment—this patient acquired syphilis. Being in the Navy, he was thoroughly treated by mercury inunctions and injections, and at a later date his blood was reported to be negative. He has had malaria, dysentery and appendicitis. Both blood and cerebro-spinal fluid still give a negative Wassermann reaction. There is, however, an increase of globulin in the cerebro-spinal fluid. These negative tests need not, I think, alter our opinion; other evidences are too strong, and it is now well known that blood and cerebro-spinal fluid tests are not infrequently negative in otherwise proved cases of central nervous syphilis.

Our second case is that of a married woman, aged 56, who was admitted for cough and pain in the chest. Her previous diseases include typhoid and diphtheria many years ago. Three months before admission she was treated for "bronchitis." Two months before admission her cough became, in her own word, "foggy." I would ask you frequently to pay careful attention to small observations of this kind and to any expressive adjectives which your patients may employ, for they sometimes have high diagnostic value. Her pain encircles the chest at the level of the breasts and scapulæ; her cough is unproductive. There has been some dyspnœa on effort.

We were immediately struck by one observation, and that was that we could not feel the left radial pulse. Now, there are many causes of absent pulse at the wrist, some common, some rare. The commonest is an anatomical peculiarity, the artery having an unusual course, or dividing early. Other causes include trauma (this patient has had a severe cut across her wrist, but we find that her brachial pulse is weak, too); arterial thrombosis or embolism; cervical rib; and, occasionally, intra-thoracic aneurysm. In confirmation of her adjective "foggy," we have noticed an aphonic quality in this patient's cough. She has an immobile left vocal cord. There is a slight impairment of note over the manubrium sterni and below the left clavicle. The Wassermann test in the blood is strongly positive. There are no signs of central nervous disease. Our diagnosis is "thoracic aneurysm affecting the aortic arch and compressing the left recurrent laryngeal nerve." Thoracic aneurysms have been described as those of symptoms and those of signs, or as those of direct and those of indirect signs. This case may be described as one of symptoms and indirect signs. We feel that we have ample evidence to explain the "foggy" cough and the defective pulse, although there is no pulsatile swelling to be seen or felt above the clavicles or between the ribs. In confirmation radiograms show a great enlargement of the aortic arch. Thoracic aneurysm is five times more common in men than in women; we should usually therefore be more hesitant about diagnosing it in a woman. There has been subjective improvement since treatment, which has included rest, preliminary mercury and iodides, and later cautious arsenical treatment. The radial pulse on the left side can now just be felt.

Our third case is that of a married woman aged 55. She was admitted for attacks of epigastric pain and vomiting, and her symptoms date from the summer of 1933. In the last twelve months she has noticed that her gait has become unsteady. Before her vomiting she has a painful beating sensation beneath the sternum, probably in association with her over-acting heart and pulsatile aorta. It might at first be supposed that her gastric symptoms depended upon some local gastric cause, but her description of the attacks is very characteristic of the gastric crises of tabes. Thus they come "out of the blue" for no apparent reason and, in spite of rest in bed and a milk diet, they continue without cease for several days or even a week on end. Between them she has no indigestion. This history alone, without any physical examination, should make one suspicious of central nervous syphilis.

When we come to examine her we find no lack of signs. In the first place, she has a waterhammer pulse of particularly marked degree. Grasping the wrist, with the palmar surface of the fingers across it and raising the arm, the almost "electrical" shock of the pulse against the fingers in systole and its abrupt diastole are evident, and the ulnar and radial pulses are both very distinct. She has a differential or pulse pressure of over 100 mm. of mercury. I would next ask you to look at her neck, where you may see a striking carotid pulsation, marking the whole course of the carotid artery from the sterno-clavicular joint to the ear.

Capillary pulsation is well shown on the forehead after producing a line of hyperæmia here by friction with the back of a finger-nail. Without a history and without a stethoscope aortic incompetence can be unhesitatingly diagnosed in the presence of such signs. In confirmation, we find enlargement of the left ventricle and a loud to-and-fro murmur in the aortic area.

When we come to an examination of the abdomen we are at once struck by the vigorous aortic pulsations. It has been suggested to me that she has an abdominal aneurysm, but of that I am not convinced. For a final diagnosis of this condition we need more than excessive pulsation of the aorta; we should require that there should be a tumour, expansile pulsation, and perhaps a murmur. With the finger placed each side of the aorta it can be appreciated that this patient has certainly an expansile pulsation in all its length and excessive pulsation; there is also a murmur, but no tumour is at present palpable. Abdominal aneurysm is a very rare condition, and only 11 per cent. of the cases are in women.

Passing to the central nervous system, we find fixed, irregular, excentric pupils, with no reaction to light, again a furrowed brow, and a complete absence of knee and ankle jerks. Here again, therefore, we can make a very complete diagnosis and label the case as one of "syphilitic aortitis, with aortic incompetence giving rise to left ventricular hypertrophy, and tabes dorsalis with gastric crises and early ataxia."

What are the lessons to be learned from these three cases? Each one has its lessons in the matter of diagnosis, reminding us here of a symptom, there of a sign to be studied and explained, and here again of the importance of historical accuracy and detail. Our first case recalls the value of physiognomical diagnosis and tells us that laboratory tests are not final. It is of further interest in that infection occurred at a time before arsenical treatment was available, and yet with mercurial treatment only the Wassermann was afterwards negative.

In our second case we have symptoms and indirect signs to interpret and a differential decision in regard to the absent left radial pulse, due either to distortion of the blood vessels at their point of origin or to encroachment of aortitis and thrombosis upon the mouth of the left subclavian artery.

In our third case the signs are patent and numerous, but all are distinct and final in the information which they convey.

The advanced pathologies now present in all three cases might to-day (were early diagnosis and adequate treatment possible) be wholly prevented. They remind us of the long arm of the disease. Now syphilis, although we are so well informed about its cause, its course and its treatment, remains common and world-wide in its distribution. A disease with sordid aspects, it is both clinically and pathologically one of the most fascinating of all, and there is no limit to its claims upon our humane consideration. I want you to remember that, as doctors, you will have a duty not only in respect of the treatment of diseases, but also in respect of their prevention. By the wiser education of children and adolescents, a saner understanding of sex problems, and free and friendly advice to men and women in the complex difficulties of their lives, by bringing problems into the light instead of keeping them in the dark, we should be able to ensure that the incidence of sexual diseases will continue to decline in the coming generations. It is my belief that the medical profession, acting in a more educational way, will, in the future, come to play a far more active and useful part in the social and sanitary re-organisation of civilised states than it has played hitherto. All doctors will become instructors in the laws of health and practitioners of preventive medicine. Guy's men, who have a way of being practical men, will, I am confident, be to the fore in whatever reforms you or your sons may eventually contemplate. To make ourselves sound clinical observers and good students of humanity should be our primary concern.

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The Medical and Dental Schools Prize Distribution and Address

By the Right Hon. Sir Kingsley Wood, P.C., M.P., Minister of Health, on Tuesday, 8th October, 1935

THE Physiological Theatre was quite filled to give an enthusiastic welcome to the Minister of Health on this annual occasion. The Chair was occupied by the Treasurer of the Hospital, Mr. F. P. Whitbread.

THE CHAIRMAN: Ladies and Gentlemen, I ask you to accord a most hearty welcome to Sir Kingsley Wood, our Minister of Health, who has most kindly placed at our disposal some of the spare time he has got, to come here and distribute the prizes, and to deliver an address which I am sure will receive the greatest concentration which you can give it. You are probably all familiar with the brilliant success which attended his administration of the Post Office. I am old enough to remember the time when the efficiency of the telephone service in this country, and even in this old-fashioned town of London, left, to put it mildly, a good deal to be desired, and caused the frequent outburst of language more forcible than polite. One could only feel buoyed up by the hope that something would happen at the other end. I have not yet availed myself of one of Sir Kingsley Wood's congratulatory telegrams, but I understand they have been received with great popularity by that small minority of the population who find anything to congratulate others about. It would be hard to over-estimate the difficulties and perplexities of the Minister of Health, but I am sure we all feel and believe that Sir Kingsley Wood will solve those problems with the same brilliancy as he solved the difficulties of his former office.

I ask Sir Kingsley Wood now to distribute the prizes.

SIR KINGSLEY WOOD said: Mr. Whitbread, Ladies and Gentlemen—I have first to thank you for your very kind and generous observations concerning myself, and the selected passages which you have taken from my career. I was, if I may say so, particularly happy that you referred to some amount of work that I did as Postmaster-General. I must say it was not always that people, when I occupied that office, referred to me in such complimentary terms. I remember an unusual case at the Post Office. It was that of a telephone subscriber who queried the accuracy of his account. So special was the case that it was brought to my particular notice. I was told that this subscriber was very angry with the official, who was doing his best to help him, and he turned on the official and said, "I can't remember the name of the present Postmaster-General, but if I address a letter to 'The Biggest Scoundrel in London,' he would get it?" And the official, well up in the Rules and Regulations of the Post Office, remarked to the subscriber, "Well, Sir, in that case your letter would be returned to the sender!" (Laughter.) So it is cheerful to hear a good word spoken for the Postmaster-General of the day.

I am, of course, very highly honoured in going back once again to the Ministry of Health, a Department where I served for a good number of years when Mr. Neville Chamberlain was Minister. I am afraid it is not everybody who thinks I am so busy as you do, Mr. Chairman. I had a shock the other morning. A friend of mine came to the office in Whitehall where the Ministry of Health is established, and went up to the official who looks after the entrance to the building. He said to him, "Is this the office of Sir Kingsley Wood?" The official looked at him, and in the end pulled down a book and looked up the names of the people who occupied the office, and then turned to my friend and said: "No, Sir, there's no one of the name of Wood who does any work here." (Much laughter.) So, of course, it is cheering to find someone who thinks I am busy.

It is with some trepidation that I, a layman, address an audience in this very temple of the healing art. Yet there is a real appropriateness in your invitation to me to come here to-day; it is a recognition of what is to-day a truism, that health in its wider aspects is not a matter for the followers of Hippocrates and the priesthood of Æsculapius alone, and that to strive to achieve the ideal, on a nation-wide scale, of a healthy mind in a healthy body, or, as Mr. Masefield would prefer to say, a "delightful and delighted mind in a delighted and delightful body," is a task calling for the best efforts, and, above all, the co-ordinated efforts, not only of doctors, but of statesmen, administrators, scientists, technicians and, indeed, of all of us.

I never think of Guy's but I recall Bob Sawyer, student at Guy's, associate of the immortal Pickwick Club and jolly good fellow. Mr. Pickwick had a high opinion of medical students. "There's a couple of Sawbones downstairs," said Sam Weller. "I am glad of it," said Mr. Pickwick. "They are fine fellows; very fine

fellows; with judgments matured by observation and reflection; tastes refined by reading and study. I am very glad of it."

I am sure the world was the better for Bob Sawyer. If he leaves a lasting impression of imbibing much of his wisdom through a bottle-neck, we must remember that fiction is selective, and that in the "Pickwick Papers" we see him for the most part in what might be called his unbuttoned hours of ease. Of Bob's work as a surgeon in India—which he reached *via* Carey Street—we know nothing, except that he resolved "to try a little abstinence," and "has since been doing well." We remember him, not for his technical skill, though I have no doubt that was, ultimately, considerable, but we think of him as an associate of the Pickwick Club, a good companion, a man among his fellows (a theme to which I shall return).

You probably need no words of mine to remind you of the great part played by Guy's in the two centuries of its history, not only in the increase of medical knowledge, but also in the spreading of knowledge both new and old, a rôle which is certainly not less important, though by its nature perhaps less spectacular. Richard Mead, physician of St. Thomas's, friend of your Founder, friend, too, of Newton and of Pope, a cultivated scholar, and probably the most successful general practitioner of his time, is, I think, the first physician who deserves a niche in your temple of fame, for, though he was not a Guy's man in the strict sense, he had much to do with the planning and organisation of the early days. I suppose the most famous of all Guy's men was Sir Astley Cooper, a man of almost all the talents, brilliant surgeon, and a not less brilliant and inspiring teacher. Let us pay tribute, too, to Bright, Addison, Hodgkin, Wilks, Saunders, Babbington, Curry and a host of others who carried the torch down the years and led many a bloodless revolution in medical thought and practice. Let us remember, too, Benjamin Harrison, active and beneficent despot, founder of the Medical School and lay Treasurer and real ruler for over fifty years. I should also like to take this opportunity of congratulating Dr. J. A. Ryle on his appointment to succeed Sir Walter Langdon Brown as Regius Professor of Physic at Cambridge. Only once before, I believe, has a man who is not a medical graduate of Cambridge University been appointed to this high office. It is a tribute to Dr. Ryle's outstanding work and to the work of the Guy's Medical School that he has been so chosen. (Applause.)

Most of you who are now students or have just qualified will, I suppose, take up general practice, and to you I would like to address myself particularly, for two reasons: one is the perfectly good democratic reason that you are the majority; and the other that, whatever the importance of ancillary services, an up to date and progressive corps of general practitioners is essential in our organisation for the maintenance and improvement of the public health of a nation which is the very basis of its well-being. A low standard of public health means waste and burden. In the fight for better health the general practitioner is in the front line.

I will not talk to you of the "ologies": biology, physiology, bacteriology and the rest; your teachers and, indeed, any one of you yourselves could do that better than I. I am but the layman looking at the doctor. Yet I have temerity enough to think that I have something to say about your preparation for your great task. Those here who guide you, lead you, inspire you, propel you (laughter)—what you will—will concentrate, and rightly, on the technical side of your art, *i.e.*, diagnosis, therapeutics, how to set a limb and dose a fever. But in formal lectures, clinics and so on, time is always at their heels. They will tell you, being honest men (but they will not have time to tell you often, and they will have hardly any time at all to see that you profit by the advice), that your education should not be limited to medicine, surgery and midwifery, that a much wider interpretation should be given to the art of medicine, that the love of men should be linked up with the love of the art.

The doctor-priest of ancient times professed knowledge of all the mysteries of life and death. Even up to fairly recent time disease was attributed to evil spirits which had to be placated or cast out. It is not so very long since Parliament in an Act intended "for the avoiding of sorceries, witchcrafts and other inconveniences," entrusted medical registration in London to the Bishop and to the Dean of St. Paul's. To-day, however, the mystic and the empiricist have given place to the scientist. Reason reigns in the place of authority. The doctor is no longer a priest or a magician. He no longer dresses himself up, at any rate in civilised countries, in the magician's mask of the "medicine-man" or the mediæval plague doctor. He has even in large measure discarded the silk "topper." But an element of magic is still present, and blessed alike in works and in pocket is he who possesses it most! This remnant of magic is what has been described as the "bedside manner." I should prefer to phrase it as "the human sympathy of the doctor," and it is probably more important than nine-tenths of the drugs in the Materia Medica. Not that I wish to under-

rate the value of some drugs at some times. Indeed, seeing that the inventor of Dover's powder was the same Thomas Dover who was largely responsible for your founder making his fortune out of the South Sea Bubble, I hope I should not be so foolish as to cast any doubt within these walls on the virtue of that particular specific. I think, however, that it is not without interest that some years ago an analysis of prescriptions in England and in Scotland showed that the Scots and the English throve to some extent on different mixtures—the Scots, incidentally, managing to get along with less of them than we did. (Laughter.)

I have used the term " human sympathy " as a convenient phrase. What I want to emphasise is that a patient is a man and not a machine, a fact which it is quite easy to forget. " One man's meat is another man's poison " is true in medicine not merely as regards drug tolerance, but also as regards the whole attitude of the physician to his patient. You must have knowledge not only of medicine but of many men. Never forget that morbid processes may work in many different ways. Your patient's illness is related, and intimately related, to the conditions of his life, his work, his games, his diet, his friends, his mode of thought, his upbringing. To treat his illness you must be capable of understanding the whole complex, which is the man. How are you to do that? By knowing much of many men, by going among men, of all kinds, by helping in affairs on local bodies, by having, acquiring and maintaining a cultural background, and not being a mere technician.

The physician, in short, must be a man of the world and of affairs. Let him learn about bones, morphology, pathological processes and so on, and let him learn them well, but let him always remember that he is treating not a universal robot but a human being, and that his treatment will be better and more effective the better he himself is as a human being. And just as it is important that your technical knowledge should keep pace with the times, by occasional post-graduate refresher courses as well as reading and practice, equally is it important that you should keep up the wider interests, and that you should resist, as far as you can, and for as long as you can, the narrowing process which sets in inevitably as youth travels further from the East. You have my fervent wishes for your success in the hard but noble path on which you have entered, and I hope I have your goodwill in mine. (Cheers.)

THE DEAN (Professor T. B. Johnston): Mr. Chairman, Ladies and Gentlemen.—We are deeply indebted to Sir Kingsley Wood, and we appreciate very highly the honour he has done us by distributing the prizes and delivering the opening address, which we have listened to with so much attention. If there is any criticism, it is that it was too short. It was a happy inspiration which prompted the School to ask Sir Kingsley to give the address this year, because at the time the invitation was issued we had no knowledge of the changes which were impending in the Cabinet. Sir Kingsley has been connected with a big commercial and highly successful business, dealing with some forty million pounds a year, yet his main interest has always been concerned with public health problems. And it is fitting that he who in 1918 did so much to encourage the formation of the Ministry of Health should now be its very distinguished Head.

We are deeply grateful that, despite the pressure of public affairs, which we know must be great, Sir Kingsley has been anxious to get a closer view of some of those who, in the near future, will be his assistants in maintaining the public health, and we are very glad that his first appearance as Minister of Health should have been at Guy's. I suspect that his presence here to-day is not entirely due to his benevolent interest in us as a school, but because, after all, he is a member of a family who were connected with Guy's, because we remember that his brother, whose early and untimely death was much lamented by his contemporaries, was a student at Guy's thirty years ago, so we can claim Sir Kingsley as a Guy's connection. We have a reputation—not wholly undeserved—of being a conservative school, but we always like to think we have been selective in our conservatism. It is true we have never followed the lead of the other London Medical Schools in establishing a whole-time professorial unit in clinical medicine, but we have provided a Professor of Medicine for Bart.'s, and also, as Sir Kingsley mentioned, we have recently provided the Regius Professor of Physic for Cambridge University. And it is interesting to note that in the reports recently published on the medical curriculum, one by the General Medical Council and the other by the Universities and the Royal Colleges, nearly all the recommendations for improvements in the curriculum have been operative at Guy's for some years past. After what Sir Kingsley has said he will probably be interested to learn that it is now eight or nine years since we began a course of instruction in Normal Psychology for medical students, and it is thirty years since the late Professor Pembrey started his courses in Human Physiology; while the close association between students and patients, which is advocated in both reports, has been the leading principle in Guy's medical training

practically ever since the School was founded. I do not mention these facts in any boastful or self-satisfied spirit, but I hope you will infer, as I do, that they indicate that, though we may be a conservative school, we are not altogether unprogressive. And I want Sir Kingsley to go away satisfied that he has honoured a School that is not altogether unworthy.

I ask you to recognise the deep debt of gratitude we owe him by according him a very hearty and cordial vote of thanks for the honour he has done us in coming here to-day. (Loud applause.)

SIR KINGSLEY WOOD: I am very much obliged to the Dean for his very discriminating vote of thanks to me. He was very generous in his references to myself personally, and I have one regret this afternoon in that I did not bring my wife, as, after what the Professor has said, she would at last have realised what a good husband she has got. (Much laughter.)

MR. W. M. MOLLISON, M.Ch.: It is my pleasant task, Ladies and Gentlemen, to ask you to pass a vote of thanks to our Chairman, the Treasurer. It has always been the case that the Treasurer takes a very great interest in the affairs of the School and Hospital, and the presence of our Treasurer here to-day proves that up to the hilt.

The vote was carried by acclamation.

THE CHAIRMAN: I thank you very much for this vote. I told you you would hear something this afternoon which would be well worth your while to concentrate upon, and this is one of the rare occasions on which I was right. I feel that what Sir Kingsley Wood was aiming at was the fact that to be successful in the practice of medicine and surgery it is all-important that you should inspire a feeling of confidence in the man or the woman whom you are treating; and that can only be done by acquiring a very sound practical knowledge of human life in all its intricacies and all its variations. I have always regarded the Dean as a perfect master in the art of happy phraseology, and to-day he has positively surpassed himself. He uttered one phrase which is worthy of the National Government: he claims for our School that it is always selective in its conservatism. That, I think, is a very fine thing to claim for the School.

Is This Civilisation?

By "Stanley"

ALTHOUGH we call ourselves a civilised people and talk loftily about "the untutored savage" and the League of Nations, are we really as civilised as we like to think? If so, why have we allowed a state of affairs to develop which bristles with the kind of problems we are accustomed to ascribe to "the stress of modern competition," "living at high pressure," "industrial depression," and so on?

Is it not a fact that many of the things we like to call "advantages of civilisation" have actually brought about a mode of life which is diverging further and further as time goes on from what appears to have been intended by Nature?

Consider the invention of artificial light, for instance, and its development through the various stages from rushlight to electricity. How are we using this "boon"?

Nature has so arranged the seasons that in the summer-time the sun rises early and sets late that man may have ample time to gather the fruits of the earth. It was obviously Nature's plan that man should get up with the sun and go to rest at sunset. These are long enough working hours, in all conscience. In the winter, with its short days, man, without the help of artificial light would rise late and retire early. This follows the natural principle of which hibernation of animals is an extreme example. Man, by means of his artificially produced light and heat, turns winter into what is called the "social season," with its dances, parties and other excitements. Thus, at the season of the year when he is intended by Nature to work shorter hours and sleep longer, he actually lives more strenuously, frequently allowing himself shorter hours for sleep than in the summer. This tends to deplete his natural energy and lower his powers of resistance to the rigours of the winter.

Again, let us take the various inventions, all of them "scientific triumphs," which have "improved our means of communication." The locomotive, the internal-combustion engine (and all its applications to land, sea and air travel), the

telegraph, telephone and wireless. What has been their effect on our daily life? Are we healthier or happier? It is doubtful. Man is going about on wheels or in the air instead of on foot or horseback. The animal population is decreasing. Our grandfathers or great-grandfathers thought little of setting out on foot to do a fifty-mile walk or riding on horseback from Manchester to London. If it were not for the growing popularity of "hiking" to-day, we should be in danger of losing our legs and becoming all head and liver. It may be thought that this is putting the matter too strongly; but is it?

There is an inexorable Law which has been called "Nature's Law of Parsimony," by which an organ, limb or faculty if not used as Nature intends it to be used, begins to diminish in size and power. There are well-known examples of this in the human body in what are called "vestigial structures," vestiges of structures which are disappearing now that man walks no longer upon all-fours. Do the advantages to mankind, from being able to fly, outweigh the disadvantages? They certainly do not. Aviation is admittedly a scientific triumph, but is man the better for utilising this accomplishment so universally and intemperately? There is nothing in the human body, either anatomical in structure or physiological in function, to indicate in the very slightest that man was ever intended to fly, notwithstanding the wonderful description of an aeroplane which is found in the first chapter of the Book of Ezekiel. It may be urged that as a result of his new accomplishment a new variety of the *genus homo* will be evolved in course of time which will differ widely from *homo sapiens*, by reaction to the new environment, and that this evolution follows an immutable law. This cannot be contradicted on scientific grounds; in fact, there are reasons which make it possible. But no perceptible change in this direction could take place in a thousand years.

The diminution of the animal population of the country which has resulted from the invention of the internal-combustion engine may not at first sight seem important. In certain parts of Central Europe there is a saying that "the wealth of a man depends upon the size of his manure-pile," meaning that a farmer with plenty of natural manure is well stocked and will be a successful farmer. Experiments in wheat-growing on soil which has been fertilised with artificial manure are said to show that the wheat may be deficient in certain vitamines which are essential for the welfare of the human body. If this be true it would suggest that there may be only a limited supply of these vitamines in the universe, and that Nature intends them to be put back into the soil as manure. Once this is proved, it would seem that the modern system of water-carriage drainage of which we are so proud is wasteful in its present form. Shortage of essential vitamines might very well be a contributory cause of race-degeneration.

During the past twenty-five years there have been some epoch-making discoveries in medical science which have conferred inestimable benefits on mankind. In some departments of medicine, however, one is tempted to ask whether we are not acting in direct opposition to Nature in the enthusiastic application of our knowledge. Is there no danger of our becoming too humane? Nature is essentially brutal, and the object of her brutality is to ensure the preservation of the species, if necessary *at the expense of the individual*. Is it not merely stupid to mobilise all the resources of medical science to prolong the lives of feeble and sickly children, who, if they ever reach adult life, are unlikely to be the progenitors of healthy stock? This is nothing less than prolonging the life of the individual *at the expense of the species*.

In the days when preventive medicine was little known, disease took a terrible toll of human life, and it was not only the weak and feeble that went under. This is happening to-day throughout the animal kingdom to insects, reptiles and animals, as well as continual warfare between individuals. Those who survive are usually the fittest, for the battle is to the strong.

It would be too great a responsibility for a doctor to have to decide to whom expert medical assistance should be given and from whom it should be withheld. There are few doctors who would deny their help, quite apart from any question of fee. Thus it is even conceivable that the performance of too many miracles upon delicate and frail subjects so that their lives are preserved might even be a subtle and unsuspected factor contributing to degeneration of the race.

And what of the untutored savage who rises with the sun and sleeps when it is dark; whose weakly children and old people die or are killed; whose women unfit for childbirth die in childbirth; whose foodstuffs grow in virgin soil or are manured with natural manure and who eats his meat nearly raw with all its vitamines, when he can get it? There can be no doubt about the excellence of his physique or his power of endurance.

Are the "civilised nations" of to-day already condemned by the spuriousness of their civilisation to degenerate and decay, or will their "superior intelligence" enable them to see the danger and find a way out?

Reviews

The Rheumatic Diseases—their Recognition and Treatment. By FRANCIS BACH, M.D. Published by Messrs. Cassell. Pp. 436. *Price* 12*s.* 6*d.*

THIS comprehensive survey of the rheumatic diseases starts with a chart which looks like a diagrammatic representation of the firmament, showing the causes of "rheumatism," inborn, acquired and predisposing. It ends with a page folded like a map which, when unfurled, shows a tabulated summary of the chief rheumatic diseases with their clinical histories, symptoms, signs, ætiologies and joint and other changes.

The first chart is a little difficult to understand at once, the second one is condensed and informative. The intervening pages are divided into three sections, the first dealing with the nature of the rheumatic diseases with reference to anatomy, physiology and pathology, the second with the clinical features that these diseases present to the practitioner, and the third section is devoted to the treatment, including medicinal treatment, protein shock and vaccine treatment, physiotherapy, postural exercises and massage, surgical treatment and diet. There are three appendices: the first gives a table showing the relative frequency of the chief types of rheumatic diseases, the second the variations in nomenclature in different countries, while the third contains a list of references. The book is thorough and well written, and as a work of reference is improved by the marginal notes, which save time and bother when trying to find a particular section. There are twelve plates and good index.

Guide to the Surgical Papers. By R. J. MCNEILL LOVE, M.S., F.R.C.S. *Price* 5*s.*

THIS is a small book which contains twenty-eight typical examination questions on surgery. These are followed by the answers, which, lest the student stray into temptation, are hidden within uncut pages. The author recommends in his preface that not more than four questions a day should be attempted, and that, if the acting examinee be unable to answer them from the resources of his own mind, he should not cut the so thoughtfully uncut pages, but should refer, before writing his answer, to some standard text-book. It must be stressed that if the student, having written what he can on the question, cuts the pages with the hope that he will find a complete answer replete with detail, he is doomed to disappointment, for this is not the author's intention.

The purpose is to indicate to the examinee the lines along which his mind should move, how he should arrange his answer, and how he should set down the views which he proposes to expound.

The book can be heartily recommended to all of us, and we are not a few, who find difficulty in putting down knowledge in an orderly way, and should prove a sound investment (five shillings to save five guineas) to those who may be handicapped by being unable to write down what may be a considerable mass of knowledge to the best advantage.

Handbook of Bacteriology. By J. W. BIGGER, M.D., F.R.C.P.I. Published by Messrs. Baillière, Tindall & Cox. Fourth Edition. Pp. 458. *Price* 12*s.* 6*d.*

THIS well-known handbook has been revised and brought up to date since the last edition of 1932. It has always been a reliable work, but its value has been enhanced by the introduction of recent advances. In spite of this the size remains the same, a feat which has been accomplished by careful and selective editing of the less important matter. Always profusely illustrated, the book has been improved by the addition of five coloured plates and numerous new figures in the text. We must welcome a revised edition of a standard text-book which yet remains the same size; at the price there is no doubt that it affords great value.

A Companion to Manuals of Practical Anatomy. By E. B. JAMIESON, M.D. Published by Humphrey Milford (Oxford University Press). Fourth Edition. *Price* 12*s.* 6*d.*

THE popularity of this small book has necessitated a fresh edition in a relatively short space of time. The author has taken the opportunity of changing the terminology to the Birmingham Revision of the Basle Nomenclature to harmonise with the manuals to which it is the "companion." The text remains practically unaltered.

For a book of such small size the amount of information contained therein is truly amazing. The volume is undoubtedly a most useful adjunct to the student of either elementary or advanced anatomy, and especially to one who is on the eve of an examination.

Manipulative Methods in the Treatment of Functional Disease. By E. L. HOPEWELL-ASH, M.D. Published by Messrs. John Bale, Sons & Danielsson, Ltd. Pp. 92. *Price 3s. 6d.*

THIS quaint little book takes us right back to the days when medicine was practised by the mystics. "More and more," says the author in his introduction, "I see the way opening to methods of manipulative medicine hitherto neglected, for there is no part of the body, no organ, no system, no symptom, no action of mind or body that is not in some way related to physical 'nerves' and nerve centres." From this, of course, it is but a step to the statement on page 11: "As a basic rule of treatment it may be laid down that there is no organ, no disease, no part of the body, no system, no chemical imbalance that cannot be reached by manipulation or neuromedical treatment where there is a proper understanding of anatomy and physiology coupled with experience of the necessary technical processes."

Now where do we get this proper understanding? Do we get it from this book? No, *Sir*. What has the author to say about the proper understanding of anatomy? He remarks that for the student, who "is taught that in the spinal cord is a series of ganglia . . . and learns something about the important nerve centres protected by the spine, which, indeed, has evolved expressly for the purpose of protecting these vital nodes . . ." it is scarcely possible to obtain enough anatomical knowledge for a proper understanding of manipulative methods unless he reads for one of the higher examinations. We would expect then that in the first section of his book, which is entitled "Neuro-Medical Manipulation," there would be some sort of anatomical instruction, or how is the reader to grasp the author's meaning? But there is not a word, except that in "the spinal cord is a series of ganglia," that the solar plexus is in the abdomen, the three cervical ganglia in the neck, and the brain within the skull. And what does Dr. Hopewell-Ash tell us of physiology for our "proper understanding"? You've guessed it, reader. Not a word. So the next thing is, what does he tell us of manipulative technique? And here he is far more explicit. "My own procedure may then include one or a combination of the following:—

"Holding one or other wrist in a firm but light grasp;

"Placing one or both hands on an appropriate 'centre,' such as the head, spine or solar plexus area;

"Rhythmically stroking along the line of the main nerve trunks;

"Rhythmically stroking a selected 'centre';

"Lightly manipulating selected 'centres' or 'areas.'"

Well, that doesn't sound difficult, does it, if we knew which centres, nerve trunks or areas to select? Unfortunately it is, says the author, "clinical experience which gives the individual practitioner the opportunity of discovering which paths are most suitable to his particular methods." It looks as though we shall have to be content for the present with holding one or other wrist in a firm but light grasp, though, of course, we could place one or both hands on some appropriate centre such as the head, just by way of a change.

The author particularly stresses that the physical results achieved must be reached through definite anatomical connections and physiological reflexes. It would be illuminating then to know what are the anatomical connections and physiological reflexes through which "manipulation of the lower cervical area—the centre of which must obviously be the seventh cervical vertebra—has a steadying, tonic and generally beneficial therapeutic effect in many cases of disturbed action of the heart." But the author doesn't tell us; nor have we a "proper" enough "understanding" of anatomy to guess with any degree of safety. Nor are we absolutely certain what is the "lower cervical area," nor why its centre is "obviously" the last but one of the cervical vertebræ. That brings us to page 13, and then we have manipulation over various points of the abdomen, curing spasm of the cardia, spasm of the flexures of the colon, spasm of the pylorus; manipulation for neuralgia, manipulation for angina, and finally, manipulation for chronic bronchitis.

Of the second half of the book, dealing with functional, mental and nervous diseases common in everyday practice, and the application of neuro-medical manipulation thereto, we can say nothing, because we didn't read it.

Asylum. By WILLIAM SEABROOK. Published by Messrs. Harrap. Pp. 266. *Price 8s. 6d.*

THIS is reported to be the book of the month in America. It is doubly interesting to those who have read the author's remarkable travel books, as it is a work not only of great intrinsic interest, but of a type which one might not have expected an old friend such as Mr. Seabrook to produce. He has told us of many strange places and customs before now, but here is a detailed account of that fantastic world into which we have occasionally had a fleeting glimpse on Wednesday afternoons at Bexley Heath. With a commendable decision Mr. Seabrook, on finding

that he was becoming unduly addicted to drinking spirits, urged that he should be at least temporarily allowed to enter a mental hospital—asylum is the word which he prefers, suggesting, as it does, a haven, or refuge, and we agree with him—in the accomplishment of which wish he ultimately succeeded. The book is an account of his experiences. It is for the most part very amusing reading without being in the least macabre. The description of the gently compelling methods and of the doctors and attendants is very well done, though it is perhaps but natural that we should think the description of the patients is best of all! In many cases Mr. Seabrook found it impossible to decide to which group particular individuals belonged.

There are many interesting things about asylum administration, as Mr. Seabrook experienced it. There were compulsory attendances at chapel, where the chaplain was specially chosen to rid the services of any vestige of religious fervour that might excite the patients (and there is no reason for supposing that this is satirically said), and, of course, compulsory work and walks. There were dances at which no patient was allowed to dance with a patient, and ingenious methods of tactful policing were instituted to see that this rule was obeyed. There was compulsory attendance at the cinema, when we see where the psychiatrists made their one mistake. The description of how the Christmas breakfast scene in "Little Women" was received by the patients is a revelation of the audience, which would seem to compare very favourably in point of sanity with the audience among which we saw this film in London. The cinema scene is perhaps the best thing in the book.

It is interesting to read how, as the patients gradually improved, instead of the charming camaraderie that had existed in the wards for the very ill, all the social distinctions arose in the wards where they were not so very ill. There appeared the cliques, the university clique, and the clique which had been to Philadelphia to hear Stokowski. We have seen before pieces of writing by psychotics which bore a close resemblance to work by Mr. James Joyce. Mr. Seabrook provides us with another, but, unlike him, we cannot resist a smile at the comparison which it inevitably evokes.

This is in no sense a great book, but it is a first-rate piece of journalism written with charm and good humour and intellectual honesty.

Correspondence

The Squash Court

To the Editor of the GAZETTE

SIR,—I have been instructed by the Clubs' Union Council to write to you and your agitated correspondents explaining the present position with reference to the possible construction of a second squash court.

The money is available, but a site is not. The erection of Nuffield House has necessitated the provision of extra accommodation for nurses. Several schemes for additions to the Nurses' Home have been put before the Governors. It has not yet been decided which of these schemes will be used. Until this is done there is no possible place for the construction of a squash cour, twhich might not be required for such extensions of the Nurses' Home.

It would obviously be quite useless to construct a squash court which would have to be pulled down within the next year or two.

Yours, etc.,

ROSCOE CLARKE,

Asst. Hon. Secretary,
Guy's Hospital Clubs' Union.

Guy's Hospital,
S.E.1.

[We have received the above letter from the Clubs' Union Council (for which we thank them) since writing on this subject in "Passim" of this issue. We publish the letter "explaining the position to us and to our agitated correspondents," although it tells us nothing that we did not know already, because it is an official communication. Readers will understand that no advance in the position has been made since the project was put forward over a year ago. We understand from quarters other than the Clubs' Union Council that the present plans proposed for enlargement of the Nurses' Home are not likely to be susceptible of architectural compromise. We also understand that some decision may soon be arrived at. Hence our exhortation for patience, for we feel that all that can be done has been done.—*Ed.*]

Guy's Hospital Biennial Dinner

FRIDAY, NOVEMBER 15TH, 1935

FIRST ACCEPTANCES UP TO AND INCLUDING OCTOBER 19TH

1873—1879

1873 Nash, Wm. Gunner
1876 Oram, Richard R. W.
1879 Hale-White, Sir Wm.
Howell, T. A. T.

1885—1899

1885 Goodall, E. W.
1887 Brock, Geo.
1890 Pilcher, E. M.
1893 Alston, W. E.
1895 Clarke, Astley V.
Vellacott, P. N.
1896 Howe, A. F. A.
1897 Way, Montague
1899 Pearce, Frank J.

1900—1909

1900 Goble, E. W.
1901 Lewin, Geo.
Thompson, A. R.
Tillbury, R.
1902 Odgers, P. N. B.
1904 Hughes, E. C.
Hurst, A. F.
Mollison, W. M.
Sheaf, E. W.
Stevenson, C. M.
Stewart, B. H.
1906 Litchfield, P. C.
1907 Laidlaw, P. P.
Palmer, B. H.
Reynolds, R. J.
Watson, J. N.
1909 Attwater, H. L.

1910—1919

1910 Barber, H. W.
Bromley, Lancelot
Cox, A. Neville
1911 Doubleday, F. N.
Marshall, Geoffrey
Witts, L. J.
1912 Genge-Andrews, G. E.
Hoby, H. J.
Reynell, W. R.
Slesinger, E. G.
1913 Lane-Roberts, C.
Mather, Horace
Ogilvie, W. H.
Ryle, J. A.
Tanner, W. E.
1914 Pedley, C. F.
Sharpe, H.
1915 Symonds, C. P.
1916 Phillips, E. S.
Wacher, H. S.
1919 Braithwaite, W. C.
Brown, H. M.
Dowling, G. B.
Lansdown, R. B.

1921—1929

1921 Hodgkinson, R. J.
Shaw, M. E.
1922 Harris, T. A. B.
Hudson, James A.
Stoker, G. M.
1923 Canning, H. R. G.
Lane, R. E.
Mitchell, G. O.
1924 Spurrell, W. R.
1925 Jago, M. E. M.
Landon, G. S.
Riddolls, S. W.
Simons, John
Simpson-Smith, A.
Strong, L. V.
Worthington, C. L.
1926 Trick, S. R.
1928 Harley, H. N. W.
Jones, W. D. Glynn
Stamm, T. T.
1929 Brocklehurst, T.
O'Donoghue, R.

1932—1935

1932 Fagge, Hilton
1935 Kramer, G. C. H.

It would greatly facilitate the arrangements for the Dinner if Guy's men who intend to be present and have not already sent in their names would do so without delay. Application for tickets should be made to Dr. Geoffrey Marshall, 45, Wimpole Street, London, W.1.

Obituary

(Reprinted from the "British Medical Journal")

DR. SAMUEL EDWARD PEDLEY

DR. SAMUEL EDWARD PEDLEY, who died on September 21st at Peacehaven in his seventy-third year, had been well known in London as a dental surgeon. He was educated at Charing Cross, Guy's, and the Royal Dental Hospitals, and obtained the L.D.S. in 1885. Three years later he qualified M.R.C.S., L.R.C.P. He then built up a large dental practice in London, being a keen scientist as well as an expert and careful practitioner. He contributed articles to the *Dental Record* and the *British Dental Journal* He joined the British Medical Association in 1894. One of his sons is in medical practice and four are dental surgeons.

DR. EDWARD PIGOTT MINETT

DR. EDWARD PIGOTT MINETT, late Government Bacteriologist in the Colonial Medical Service, died on October 5th at Uplyme, Devon. He received his medical education at Guy's Hospital, obtaining the diplomas M.R.C.S., L.R.C.P., and the D.P.H.Camb. in 1907; he graduated M.D.Brux. in the same year, and took the D.T.M. & H. in 1909. After holding clinical appointments at Guy's Hospital, he specialised in bacteriology and public health, and undertook work in London, Hertfordshire and Essex.

He went out to British Guiana in 1910 as Assistant Government Bacteriologist, and from then until 1922 held successively the posts of Government Bacteriologist and Medical Officer of Health. In the first few months he received the thanks of the Secretary of State for the Colonies for identifying "mal de caderas," and for a special investigation of leprosy, which was subsequently published as a white paper. He was honorary secretary and representative for British Guiana at the West Indian Medical Conference in 1922, and honorary secretary, Fellow, and examiner to the West Indian Branch of the Royal Sanitary Institute.

The year 1922 saw his transference to Hong-Kong, where he was Government Bacteriologist and officer in charge of the Bacteriological Institute, and lecturer and examiner in hygiene and medical jurisprudence to the University. He was also medical officer of the Hong-Kong Volunteer Defence Corps, and resided in the island until 1928.

During the war Dr. Minett served in France, Salonika, Egypt and Palestine, being particularly concerned with water supplies. He was twice mentioned in dispatches. For a time he was also medical officer of health for Jerusalem and P.M.O. of hospitals and dispensaries in Haifa and Acre. Dr. Minett's two best-known books were the "Diagnosis of Bacteria and Blood Parasites" and "Practical Tropical Sanitation." He also contributed to the *British Medical Journal* and other periodicals.

He had been a member of the British Medical Association since 1909. He is survived by his widow, who graduated M.D.Lond. in 1916 and has held medical appointments in Hong-Kong and British Guiana, and a son, who is a medical student.

Sport

Rugby

Guy's v. United Services (Portsmouth)

THE Hospital accomplished a splendid performance on Saturday, October 5th, when they visited Portsmouth and defeated the United Services by a placed goal and 3 tries (14 points) to a placed goal (5 points).

It was a magnificent game, and, although Guy's attacked for three-quarters of the game, they could not obtain the lead until ten minutes from time.

In spite of the fact that they were without C. S. Darke and P. K. Hopkins (both injured), the Hospital forwards did extremely well; not only did they dominate the scrums, but their work in the line-out was a marked improvement on that seen in previous games.

The Services were the first to score when, after five minutes' play, Sub-Lieutenant Walters scored a snap try near the corner flag following a rush by his forwards, and Sub-Lieutenant Harley converted with a brilliant kick from near the touch-line.

After this reverse Guy's exerted considerable pressure and penned the Services in their 25. Repeated efforts to break through met with relentless tackling, and Guy's found it extremely difficult to penetrate a sound defence.

The Services' forwards never gave up trying, and on several occasions they cleared their lines with spirited rushes. On one occasion they brought off a glorious combined dash half the length of the field, and only just failed to score.

It was not until near the interval that Guy's managed to reduce the deficit, and then, following a brilliant cut through by C. G. Wright, Dick raced over for a fine try, which was not converted.

Guy's continued to have most of the play in the second half, but it appeared that the Services would retain their slender lead, when Dick scored a gem of a try—in fact, the best seen on the ground for some time.

After Harvey had half tackled Steytler, Dick obtained possession of the ball in midfield and, putting on top speed, went clean through five or six opponents. He appeared to slow down on reaching the full-back and made as though to pass out to the wing, but instead sold a delightful dummy and swerved in for a perfect try, but the kick at goal failed.

Encouraged by this success, Guy's pressed heavily, and the Services' defence cracked in the last few minutes. Stewart found a gap and scored another unconverted try, and Whitteridge took the ball off the hands of the full-back and crossed for a try, which Wright converted.

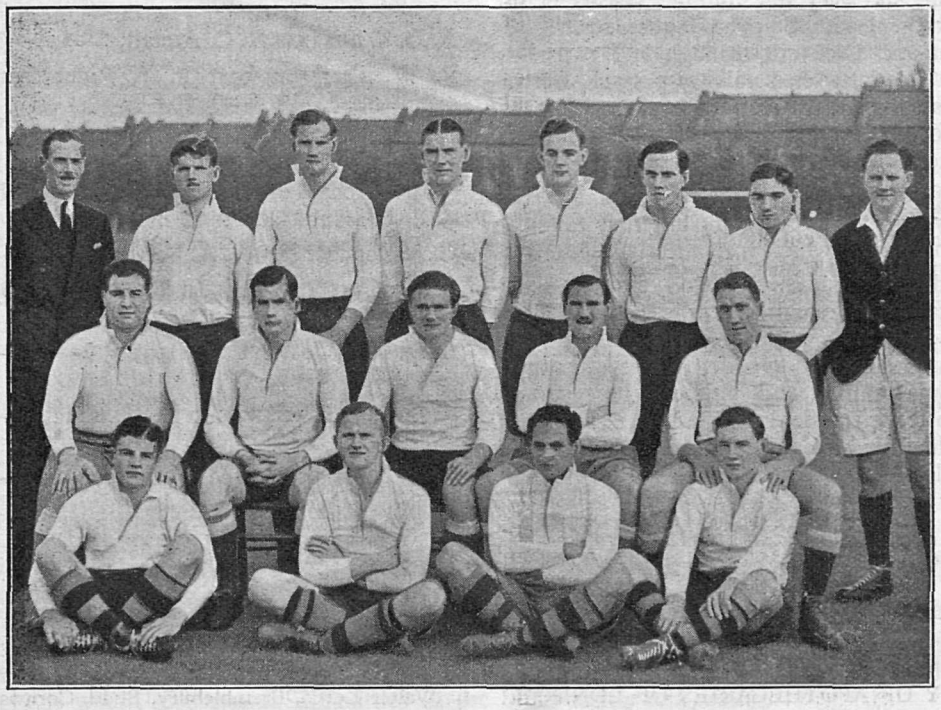
It was an enjoyable match and the Hospital fully deserved their success.

Team.—C. Halamandres ; C. G. Wright (Capt.), R. C. S. Dick, I. McD. Stewart, R. M. de Gregory ; J. van A. Steytler, K. A. Stanyon-Jaques ; M. R. Kark, A. J. Drew, J. L. Harrington, E. R. Davies, E. B. French, P. Fletcher, S. M. Whitteridge, W. F. Fraser.

The conditions were ideal and the ground in perfect condition when Guy's kicked off with the sun in their eyes and against the breeze.

The Hospital had the advantage of the early exchanges, but good work by the Old Boys' forwards, who were excellent throughout, transferred play to the other end of the field, and they only just failed to cross the line.

Keeping up the pressure, the Old Boys secured an early lead from a line-out near the 25 line when Williams threw out a long pass to Winch, who caught the Hospital defence on the wrong foot and ran in behind the posts for a try, but Dixon failed to convert from a favourable position.



By kind permission of the "South London Advertiser."

Guy's v. Old Alleynians

ON Saturday, October 12th, Guy's entertained the Old Alleynians at Honor Oak Park, and after a hard-fought game were successful by a placed goal (5 points) to a try (3 points).

C. S. Darke, the Hospital captain, was still unable to take his place in the side, but I. G. Robin made a welcome reappearance and, with I. McD. Stewart injured, an opportunity was given to A. B. Baxter, who has played consistently well for the junior fifteens.

Just prior to this Godfrey missed an easy penalty, whilst a little later Whitteridge made an excellent attempt to kick a penalty for Guy's.

The Old Boys were getting the ball from most of the scrums, and Spencer, their scrum half, made full use of the numerous opportunities that came his way. Spencer was a tower of strength to the Old Boys, and was dangerous whenever he had the ball. On one occasion he broke away from midfield and cleverly eluded all opposition until faced by Halamandres, when he made the fatal mistake of looking around and was tackled.

This was a lucky escape for Guy's, who immediately returned to the attack following a fine kick to touch by Dick. The Hospital backs participated in several passing movements, but the Old Boys were on their toes and prevented any attack from becoming dangerous, and they were able to retain their lead at the interval.

The visitors started the second half strongly, and their forwards led several raids on the Hospital line. However, Guy's defended splendidly, and Yerbury distinguished himself when he tackled Williams five yards from the line.

Guy's fought back and, as the game progressed, the forwards became more effective and were very lively in the loose. The backs began to see more of the ball, and very few minutes passed before they took the lead. Stanyon-Jaques started the movement and Dick cut through and passed to Wright. The latter had no easy passage, but his speed was sufficient to carry him past two opponents before grounding the ball behind the posts, for Whitteridge to add the goal points.

A ding-dong struggle followed, and the Old Boys very nearly scored again, but they failed to finish a movement which was cleverly engineered.

Towards the end Guy's made another determined attack, and remained in the visitors' 25 for some time, but the pressure was relieved when Steytler was adjudged offside. Soon afterwards Steytler was injured, and, although he resumed, he had to leave the field a little later. However, Guy's held their own and retained their lead until the whistle sounded for no-side.

Team.—C. Halamandres; C. G. Wright (Capt.) R. C. S. Dick, A. B. Baxter, R. M. de Gregory; J. van A. Steytler, K. A. Stanyon-Jaques; I. G. Robin, A. J. Drew, P. Fletcher, E. B. French, E. R. Davies, W. F. Fraser, S. M. Whitteridge, R. O. Yerbury.

Squash Racquets

GUY'S played the Old Cliftonians on Thursday, October 10th, and won by 3 matches to 1.

H. G. N. Cooper beat J. H. Walters, 9—4, 10—8, 9—2.

M. A. Partridge lost to G. G. Aslett, 2—9, 9—6, 9—7, 2—9, 7—9.

A. D. Willis beat R. C. Arendt, 9—5, 9—3, 10—8.

P. W. Clarkson beat P. J. Richardson, 9—1, 9—2, 8—10, 6—9, 10—9.

A MATCH was played against Thames House on Friday, October 18th. The Hospital lost by 2 matches to 3.

C. A. Boucher beat V. A. Bergne, 9—4, 9—7, 9—2.

M. A. Partridge beat L. B. Heale, 5—9, 10—9, 6—9, 9—7, 9—6.

A. D. Willis lost to C. B. Barratt, 9—5, 9—5, 3—9, 9—10, 3—9.

R. Gilbert Harris lost to D. C. King, 2—9, 6—9, 9—10.

C. G. Baker lost to J. M. T. Perry, 0—9, 6—9, 0—9.

Hospital Information, etc.

Pass List

SOCIETY OF APOTHECARIES OF LONDON.
PRE-MEDICAL AND PRIMARY EXAMINATIONS.
October, 1935.

Anatomy.
J. V. Braithwaite.

Physiology.
J. V. Braithwaite D. B. Roberts

Papers by Guy's Men

E. P. Poulton. Convalescence on the Thanet Coast. *Med. Pr. and Circ.*, 1935, cxci, 321.

T. G. D. Bonar. Congenital atresia of the duodenum. *Lancet*, 1935, ii, 822.

George W. Bray. The treatment of asthma. *Post-Grad. Med. Jour.*, 1935, xi, 339.

Ronald Jarman. Anæsthetic for dental work on children. *Brit. Dent. Jour.*, 1935, lix, 436.

Changes of Address

Walter Lewis, Bramblebury, Bude, Cornwall. *Bude* 323.

Birth

FOX.—On September 6th, 1935, to Dr. and Mrs. M. E. Fox (nee York), at 157, Jamaica Road, S.E.—a son.

LEWIS-PHILIPPS.—On September 25th, 1935, at Royal Nursing Home, Cheltenham, to Dr. and Mrs. H. Lewis-Philipps, of Clyngwynne, Whitland, Carmarthen—a son.

LONGHURST.—On October 11th, 1935, to Harriette, wife of G. B. Longhurst, L.D.S., R.C.S.Eng., of Netherleigh, Minehead—a son.

EDS. { P. W. C. / M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLVIX *9th November 1935* *Number 1234*

PASSIM

THE plans for a new Pathology Block are now being considered, and arrangements should be complete by the New Year, when a start will be made on the demolition of those warehouses which, darkening the windows of the North side of the Medical School, stand between it and the Borough High Street. Work on the actual building should be started by next summer, and be completed in a year; it is hoped to open the Department in October, 1937, for the year 1937-38.

The new block will occupy five thousand square feet, and be seven stories high. It will house not only the Pathology Department, but also the Departments of Bacteriology, Clinical Chemistry, Pharmacology and Physics. In the Medical School the space vacated will be used to provide additional accommodation for the teaching of anatomy and biology. It is proposed that approximately one floor should be devoted to each of these departments, in which lecture theatres, laboratories and facilities for research will be provided; there will also be space, probably on the roof, for the animals used for research and diagnostic purposes. There is not likely to be any change in the site of the Post-mortem Room, for a change to the new department would give rise to difficulties in the transport of material, and entail an expenditure incommensurate with any possible advantage. All those who have tottered with the products of a test meal through the Park to the old Clinical Laboratory need not be dismayed by the prospect of an even longer journey to the new one, for it is suggested that there should be a depot in the Medical Block where any specimens may be deposited for collection.

Connection with the Medical School will be provided by a passage way, which will also communicate with one leading to the Medical Block in Nuffield House. With these new extensions our catacombs, already the most striking feature of the Hospital to many visitors, will rival those of Paris and of Rome.

It is likely that the cost of this scheme will not be less than £50,000, but the cost will be borne by the Medical School and not by the Hospital. The advantages that will accrue, however, will very soon be felt not only by the Hospital, but by those who are fortunate enough to undergo their training here.

OF the twenty medical candidates standing for the forthcoming general election, three are old Guy's men, all of whom are at present sitting members. Sir Francis Fremantle, M.D., M.Ch., F.R.C.P., is seeking re-election for St. Albans; Dr. Alfred Salter, M.D., is again contesting his old seat, Bermondsey West; Sir Ernest Graham Little, F.R.C.P., is again standing for the University of London.

THE fifth Alfred Fripp Lecture will be delivered in the Sheldonian Theatre, Oxford, on Saturday, November 16th, at 5 o'clock. Mr. Alfred Noyes will speak on "Happiness and Success."

WE congratulate Dr. Eyre on his appointment as Emeritus Professor of Bacteriology to the University of London.

WE congratulate members of the London University Officers' Training Corps Medical Unit on winning the Grey Cup for Efficiency open to all hospitals represented in the University. Guy's were first with 59 points, closely followed by University College Hospital with 58. Bart.'s were third with 45 points; five other hospitals also competed.

WE draw attention to the dance which is being organised by the Blackheath, Lee and Lewisham Branch of the Guy's Hospital Ladies' Association, under the direction of Mrs. Howard Allen. This function will take place at the Normandie and Tudor Rooms of Chiesman's, Lewisham, S.E.1,

on Friday, November 29th, at 8.45 p.m. Lady Shipway will act as hostess, and dancing and bridge will be arranged from 9.0 p.m. till 2 a.m. The rooms are to be fully licensed, and tickets, which are 7*s.* 6*d.*, can be obtained from Mrs. Howard Allen, at Belmont, Eaglesfield Road, Shooters Hill, S.E.18, or from other members of the committee. Cars may be parked on the premises.

▭

"WHAT a word!" was the expression that tripped off our tongue on looking at notice boards outside the Medical School Office, which would have staggered Mr. A. P. Herbert. The notice that caught our eye told us that a course was about to "commence" in Patho-Dental Histology. We do not know what this means, unless it be Morbid Histology of the teeth. But this sort of thing ought to be stopped.

▭

WE are glad to see that our suggestion in "Passim" of our last issue that charges might be made for cars parked in the Front Quadrangle, has been acted upon so readily. We regret, however, that the suggestion has been carried so far as to include the Junior Staff, for it would have been a graceful gesture to exempt them from this charge, if, indeed, such exemption be not their rightful due. We are assured that our suggestion has had nothing whatever to do with the enforcement of this measure, and, as a matter of fact, we can well believe it.

WE congratulate the following on their appointments :—

House Physicians—
To Dr. Hurst—Mr. W. N. Mann.
To Dr. Mutch—Mr. J. R. Forbes.

House Surgeons—
To Mr. Hughes—Mr. R. W. Cope.
To Mr. Bromley—Mr. J. E. Giesen.

Out-Patient Officers—
Mr. J. A. T. Hammond. Mr. J. H. Mayer.
Mr. R. McDonald. Mr. J. E. Spalding.

Assistant House Surgeons—
To Mr. Ogilvie—Mr. P. W. Clarkson.
To Mr. Doherty—Mr. D. F. G. Moir.
To Mr. Grant Massie—Mr. C. A. Lillicrap.
To Mr. Eckhoff—Mr. M. R. Kark.

House Physician in the Children's Department—
To Dr. Cameron and Dr. Hampson—Mr. M. J. Harris.

House Physician to the Neurological and Dermatological Departments—
To Dr. Barber, Dr. Symonds and Dr. Gillespie—Mr. A. M. G. Campbell.

House Surgeon to the Ear, Nose and Throat Dept.—
To Mr. Mollison—Mr. A. Ponder.

Obstetric Residents—
To Mr. Chapple and Mr. Gibberd—Mr. W. H. Hamilton.
To Mr. Cook and Mr. McNair—Mr. H. A. Hamilton

Obituary

S. E. PEDLEY, M.R.C.S., L.R.C.P., L.D.S., R.C.S.Eng.

By Clifford Pedley, Esq.

MY father was the fifth son of George Pedley, who, at the age of 19 in 1849, came to London from Cheshire and for many years practised dentistry in the Borough, and at Railway Approach, London Bridge.

In 1885 my father obtained his dental qualification at the Royal Dental Hospital, and in 1888 secured his Conjoint qualification at Guy's, assisting meanwhile in my grandfather's practice. He wished to go to China to take up medical mission work, and was accepted by the Baptist Missionary Society, and designated for the city of Sian-fu, in the Province of Shensi. Family ties, however, prevented him, and he started in dental practice in Camberwell, later marrying and devoting his whole life to the care and education of his family of seven children. By a coincidence his fourth son, Dr. J. E. Pedley, is now carrying out medical mission work in Shensi Province, under the China Inland Mission.

Of a devout nature and possessing great kindness of heart, he never spared himself, and worked to give his sons the best Public School and University education.

It was his regret that he had not been able to take more active part in the meetings and functions of the British Dental Association, but he read much and kept abreast with the times. He was not so well known in the profession as he might have been, but recently he wrote : "My active working days have ended, but not before four of my boys had qualified as dental surgeons, the fifth as a medical practitioner."

We, his five sons, are proud of him and his fine example of courage and self-sacrifice. To the many who knew and loved this man of small stature and largeness of heart, his passing will be keenly felt.

Clinical Surgery

A Clinical Lecture delivered at Guy's Hospital by W. H. Ogilvie, Esq., F.R.C.S.

GENTLEMEN,—I am frequently asked by foreign colleagues whom I visit or who visit me, for a list of first-class surgeons, a request to which I readily comply, giving the names of those men in London and the Provinces to whose clinics I repair whenever I get the chance, from whom I have learnt much in the past and who will always have something new to teach me when I go again. But if I pause, as I sometimes do, to consider the question in all seriousness, its difficulties appal me. What is a first-class surgeon, and how may we judge him? Most surgeons pass through three stages. In the first they are young and enthusiastic, stored with an immense amount of information that they have acquired in passing their Fellowship and Mastership examinations, full of ideas that they mean to work out, safe and skilful but stereotyped operators, very poor and entirely unknown. In the second their knowledge has been coloured by personal experience, and if they are made of the right stuff has been built up into surgical wisdom; their ideas have been cultivated and have borne fruit in contributions to surgical science, and in a more general way in an outlook that is their individual contribution to the store of their time; their technical work is polished and perfected by constant practice, the elimination of unnecessary steps, and the adoption of all that they consider best in the work of others, and the knowledge borne of experience which teaches the particular device best suited to the particular problem; they get plenty of patients from those who know the value of their work, and they make a reasonable income, most of which is spent in educating their children. In the third stage we may picture them graced with a title, operating for large fees on the nobility and plutocracy and enjoying a brief period of real prosperity, rising with a fortunate few to a third of the income of a successful barrister; they have ceased to modify their ideas and their operating is perfect and standardised. It is during the second of these periods that a surgeon will be first class if he is ever going to reach that distinction, but it is very difficult indeed to hear of these men during the time they are at their best. In common with many others whose hobby as well as whose work is surgery, I would give a great deal to be able to hear of the men in whom the divine fire is still burning brightly, so that I can learn from them something that will improve my own work. But the lists I get from my informants contain the names of the giants only, and I find that much of my time is wasted in gazing at ancient monuments and listening to the rumblings of extinct volcanoes.

What, then, are the marks of the really great surgeon? He must, I think, be judged on at least five separate counts. First, knowledge of surgery and the sciences on which it is based, anatomy, physiology and pathology; acquaintance with surgical history, surgical literature, and the contemporary work of other surgeons in England and abroad. Second, original work, the extent to which he has himself advanced surgical knowledge or practice. Third, clinical judgment. Fourth, operative skill. And fifth, the ability to communicate his views to others by teaching and writing, to influence others and to train successors. I have often amused myself by trying to construct a ranking list of British surgeons, based upon these criteria, a list similar to that of tennis players which is compiled by the L.T.A. My principle is to award marks on each count: 10 for knowledge, 30 for original work, 30 for clinical judgment, 20 for operating, and 10 for teaching and writing. To reach the first class a surgeon must obtain 80 marks. Now I am sorry to say that in my various test examinations only eight have hitherto been passed in the first class, three in London, three in Edinburgh, and two in the Midlands. But this somewhat depressing pass list is qualified by two observations: that I have only seen a small proportion of the men in the intermediate period from which I should expect to draw the majority of my stars, and that my system of marking is my own. Had I given, as many will, 50 marks for operating, I could make the roll of honour a large one. But I cannot see that the skilled operator is any more a great surgeon than the skilled car driver is a skilled engineer. The three best technicians I have known are poor surgeons, while many of the names that will live in history were mediocre operators. Robert Jones was no more than adequate in the theatre; Lister and John Hunter were, I understand, but indifferent performers with their hands.

I have marked clinical judgment very high, as high as original work, because I think you will all agree with me that it is the sound and wise clinician who becomes the leader among his fellows. Clinical judgment implies force of character, real innate wisdom, human interest and experience. The clinician is the man to whom we all go when we are ill, to whom we turn for advice when we are puzzled, who becomes the natural leader

among men who may have greater intellects than his own; he is more likely than the thinker or technician to contribute really important advances to our knowledge, for it is in the collecting of scattered clinical observations that new lines of research are initiated, new diseases isolated and improvements in treatment effected.

The clinical sense is a quality that we recognise easily in our fellows and our teachers, yet it is surprisingly difficult to define. The good clinician may know no more than we do; he may be inferior to us in degrees, academic qualifications, and medical school prizes. He sees the same cases that we do, elicits the same history, and makes the same physical examination. But to his inquiry he brings something more; having heard the history he proceeds to ask questions in an orderly manner, seeking to elucidate certain trains of thought that the facts hitherto presented to him have started in his mind; he supplements the routine examination by the search for other signs, the presence or absence of which are to be the deciding point in his opinion. Having finished his examination, he can present us with his conclusion in a manner that is always orderly and usually illuminating. He will summarise the history and the findings, laying his finger on the essential points; he will be able to tell us whether the diagnosis and treatment are clear, and, if so, why; if not, he will emphasise the possible alternatives, which of these we must guard against, and which are of less importance; he will have decided whether the case demands immediate action, a search for further facts such as X-rays or some laboratory investigation, or whether the progress when under observation will provide the key to the riddle. Such a man is always helpful, and nearly always right. Among surgeons, our late senior surgeon, Mr. Steward, was a remarkable example of the gifted clinician. Those of you who worked for him or attended his ward rounds will remember his uncanny knack of being always right, even when his views seemed directly opposed to the obvious conclusions and teachings of text-books.

I have used the word "gifted" and "knack," for when we meet the great clinician we are apt to look upon his qualities in this respect as some special endowment, a sixth sense only granted to the fortunate. I am sure that this is not true. Unlike the power of original thought or the capacity for teaching, which only a few possess, clinical wisdom is acquired, but acquired with much labour. It is for these reasons, because it is an attainment that all can possess who really set their minds to it, and because it is above all others the quality that makes a man a "good doctor" in whose hands the lives of his fellows can safely be trusted, that I value it so highly.

I remember an occasion when I took part in one of those mass consultations which only the very rich or the very important are unfortunate enough to demand. I say this with no trace of cynicism, for when many experts meet together, either they agree, in which case the same verdict would have been reached more quickly and cheaply by one of them acting alone, or they disagree, and the line of action finally decided upon is not the clear-cut and definite decision of one mind, but a compromise representing the modicum of agreement remaining after conflicting views have cancelled out. In this case the patient was an eminent scientist affected with severe diabetes, and also the victim of an enormous carbuncle, which had been excised. There were present besides myself, a pathologist, a bacteriologist, two titled physicians, another surgeon and the general practitioner. Discussion ranged around cardiac stimulants, vaccines, staphylococcal sera, injections of colloidal metals, intravenous antiseptics, immuno-transfusions and further surgery. We had before us charts, and blood tests of every description. Meanwhile Lord Horder sat by himself studying the nurse's report book, and elucidated the clinical fact which was of far more importance than all these laboratory measures—that the intake of fluids had for some days been grossly insufficient, and that the urine output had fallen to 8 to 10 oz. in the 24 hours.

Clinical sense is in its essence practical wisdom, a very different thing from knowledge. "Knowledge dwells in heads replete with thoughts of other men, wisdom in minds attentive to their own." Knowledge is, of course, essential in our profession, but it is the assortment of amino-acids from which the personal proteins of clinical wisdom must be built up by synthesis. Knowledge comes to us from books and lectures, from the study of pathological processes, but upon this information we must build a further edifice that we can only construct for ourselves out of our experience. We must not only know the types of disease—inflammatory, degenerative, neoplastic; the pathological anatomy, symptoms and signs of appendicitis and carcinoma of the breast; we must learn to know what diseases to expect in either sex and certain ages, or in patients of some particular appearance and bodily habit. We want to learn many things that can only be acquired by personal observation, the smell of uræmic breath, the look on the face of a patient with general peritonitis, the mental attitude of an early Graves' disease, the appearance of the vomit in acute dilatation of the stomach, the voice and cough of an abductor

paralysis of the vocal cord. We must know instinctively when a patient is really ill, when one who was progressing well has become worse, or when one who has been ill has taken a turn for the better.

Clinical wisdom in its essence is case memory. It is built upon and amplifies the surgical knowledge we derive from teaching and text-books, in much the same way that case law expands and elucidates the acts upon the Statute Book. Certain legal principles are laid down from time to time, but their full interpretation is only attained by the practical experience of the law courts in individual cases. Clinical wisdom can in the same way only be learned at the bedside and in the Out-Patient Department. We must not merely see all the cases we can ; we must study them, and in proportion as we turn them over in our minds and marshal the facts we learn, and by building the conclusions we deduce from these facts into something of our own, in so much will we become wiser. In this connection a few cases properly studied will serve us better than a much larger number merely looked at. To get the greatest benefit we must examine each case thoroughly, think it over, talk it over, read it over, and commit ourselves to some definite decision. Whether that decision be right or wrong, in either case we will have learned something which we will remember.

This brings us to the side of the patient and to clinical methods. But again I must insist that clinical methods are only the means of obtaining certain information which the mind has then got to use. The mind is the one instrument which becomes sharper and not blunter with repeated use.

First, and usually most important, comes the history. The barrister asks questions of a witness to extract the answers that suit his case. The doctor is seeking truth, and this should flow without extraction. He should listen and not ask questions. Any questions should wait for the time when the patient has told his own story ; they should be reserved for the elucidation of facts which have been omitted, and they should never suggest their own answer. Thus we should ask " Has your weight altered ? " rather than " Are you losing weight ? " " Does the pain come on at any special time of day ? " rather than " Is the pain related to meals ? " and " Have you noticed any difference in the motions ? " rather than " Are the motions pale or do they contain blood ? " To listen to a story often requires great patience, but the sequence of events as told by the patient without assistance will often contain some illuminating observation that will shed invaluable light upon the problem. A long series of such spontaneous case histories, carefully listened to and as carefully recorded, may even help us as we get older to add to the sum of clinical knowledge, and learn to differentiate diseases which had hitherto escaped recognition. I can only refer you in this connection to Moynihan's work at the beginning of the century, whereby he first established duodenal ulcer as a disease possessing clinical features on which alone it could be recognised with certainty, and to the wonderful series of papers, notably that on colon spasm, which I am glad to say are still coming from Dr. Ryle of this hospital. Such work is of far greater importance to mankind than the discovery of insulin, for it permits the recognition of common ailments in their early and curable stages.

While you are listening to the patient's story, your eyes and your ears are also summing him up. By the time he has finished the narrative you should have a good idea, not only of the trouble that has brought him to see you, but of what manner of man he is. This knowledge of human beings, call it garden psychology if you will, is a matter of first-rate importance, for it gives the touchstone which will help us to assess the value of the whole clinical picture. What is an ache to one man is an agony to another, and a degree of tenderness that will allow a confident diagnosis of appendicitis in a placid and sensible young woman may be of no significance in a neurotic and self-centred girl. We must, however, beware of labelling anybody as neurotic without careful consideration. In the " Story of San Michele " this disease is referred to as " Le maladie du petit papier," the chief symptom being that the patient comes with all his complaints written down, lest he forget even the smallest of them. These tabulated woes are usually imaginary, for real suffering requires no reminder. But it sometimes happens that the conscientious and self-effacing man who is really ill will come thus prepared, not because he wishes to present you with an imposing list of ailments, but because he is desperately anxious to avoid wasting your valuable time, and wishes to give his story in as consecutive and orderly manner as possible.

You will also have been looking at the patient while you have been listening to him, and will have observed such things as evidence of recent wasting in a loose collar and flabby skin, traces of suffering, the pallor of anæmia, the marks of mental anxiety. You will be saying to yourself, " What is a patient with this appearance likely to have the matter with him ? "

Following the general survey which accompanies the taking of the history, we proceed to inspection ; to examine with our eyes those parts of the body which the history has suggested may be the seat

of trouble. I have not time to discuss the many things that may be seen with the eye—shape, symmetry, colour, movement; but I must remind you that sight is appreciative of far finer distinctions than touch or hearing. The impulse of a small hernia can be far better seen than felt, the swelling of a deep-seated abscess, such as one in the perinephric fat, is more obvious to the eye than to the finger. There are, however, three rules that we should endeavour to follow: examine the whole patient, examine the whole of a system, and compare the two sides.

Errors frequently arise from a failure to look on the patient as a whole. As I entered the room for my clinical examination in the Final Fellowship, I passed by the end of a bed on which lay a patient allotted to a great personal friend and fellow registrar. I noticed an ulcer on the sole of the foot. My friend was asked to examine a fluctuating swelling in the groin, and, failing to lift the blanket and examine the whole lower limb, he missed the fact that this swelling was a cold abscess in a lymphatic gland, secondary to a tuberculous lesion of the plantar skin. Another candidate was presented with a mass in the epigastrium, clearly malignant; he also failed to uncover the lower parts, which had been covered, perhaps for decency, perhaps for warmth; this patient's right testicle had been removed three months previously for a teratoma.

We must also remember to examine the whole of a diseased part, be it a limb or a system. The investigation of a case of enlarged glands in the neck is not completed by an examination of the field which we know is drained by these glands; we must also review the remainder of the lymphatic system, the glands in the axilla, groins and abdomen, and the associated organs of the reticulo-endothelial system, the liver and spleen. An obscure disease of one joint may be made clear by looking at the other joints, of a bone by reviewing the rest of the skeleton.

Comparison of the two sides of the body is a precaution which may seem elementary, but whose omission has led to countless errors. There is no such thing as a normal human being. The Venus de Milo, the perfect female form to the Greeks, would to-day be suspected of gall-stones; the nose of Apollo is now only seen in patients who have had a cartilage graft. Relative proportions of the parts of the body, muscular development, and range of joint movement, each vary from individual to individual, and each can only be called normal if, besides falling within average limits, it tallies with that on the other side. Failure to exercise such a check has led to the extensor brevis digitorum of the foot, the vastus internus at the knee, and the teres major, being incised as abscesses. I have seen a patient who had sustained a minor injury to the wrist, immobilised in plaster for six months as a fractured scaphoid. A radiogram of the sound wrist showed a similar condition, which was merely a bipartite scaphoid—a persistence of the os centrale which is found in some apes—to be present on the other side.

By palpation we obtain further information about our patients' bodies through the sense of touch, and we also elicit certain reactions on their part, such as hyperæsthesia and tenderness. We are all accustomed from childhood to use our eyes, though the faculty of observation is acquired; but the sensation of touch varies enormously in its acuity from individual to individual. It is said that some cardsharpers can feel the pips on playing cards, and that burglars can trace the movements of the tumblers in a lock by sensing their fall. A highly developed tactile sense is part of the equipment of the skilled clinician; this we must strive to acquire by constant practice, by developing tactile discrimination, and by learning to recognise the feel of familiar and rare conditions by frequent contact. Such education is a matter of developing association tracts between the finger and the brain, as we speedily realise when we are forced by some accident to use an unaccustomed finger for rectal examination.

To educate our sense of touch we must proceed on a system, carrying out our examination in an orderly and purposeful manner, feeling everything once, and only returning to settle some doubtful point. Nothing looks worse than to see a student pinching a painful breast time and again while he talks to the examiner, learning nothing but hurting the patient. The principle of systematic palpation is the *crescendo*, to proceed from the superficial to the deep, and from painless manipulations to painful ones. Taking the abdomen as an example, we should first examine the skin for evidence of wasting, for localised heat, and for hyperæsthesia; then the muscles, for guarding; then we should examine more deeply with the flat of the hand, comparing the two sides, first the subcostal regions, bearing in mind the liver, spleen and gall bladder, then the epigastrium, right and left flank and umbilical section; then the iliac fossæ and hypochondrium, then the renal regions; we should next examine more deeply and locally with the points of the fingers, for large tumours will be felt with the flat of the hand more readily than the fingers, and small ones preferably with the fingers; lastly we should seek for tenderness. In examining the abdomen we must remember that a large and important subdivision

can only be reached through the rectum or vagina. In the limbs we should examine first for shortening, wasting and heat; then for spasm and movements; then for abnormality of outline or synovial thickening; and last of all for tenderness.

Percussion and auscultation are possibly less important in surgery than in medicine, but we should never omit to reflect whether we may, by such means, increase the store of facts upon which our decision must be made. By percussion we can determine the outline of the liver, the presence of free gas in the peritoneal cavity, the size of the stomach and the cæcum; we can decide whether the trachea has been displaced by a goitre; we can tell whether an appendicular abscess is in contact with the abdominal wall or still enclosed in coils of gut; and we can distinguish between a hernia and a swelling containing pus. Auscultation may allow us to differentiate a hæmangioma from a lipoma by the sound of blood rushing through its vessels, and to determine whether a patient is suffering from peritonitis or intestinal obstruction.

There are many other methods of clinical examination which I have not the time to touch upon, but you will employ any which can possibly yield one more fact to help you to a diagnosis. And that diagnosis you must make, and, for the good of your clinical soul, you must make it certainly and irrevocably, preferably on paper, "with reasons for your choice." It is only too easy to avoid such commitment, by keeping several alternatives up your sleeve and saying, "This may be *a*, *b*, or *c*"; by postponing decision until appeal has been made to some laboratory test; or by waiting until the case has been diagnosed by your seniors. This way lies clinical futility; for your own purposes it is far better to be sure than to be right. While you are a student the diagnosis will not rest with you alone. Somebody more experienced will discuss the problem, in which case you will probably know the truth; or the patient may come to post-mortem or to operation, when you will certainly know it. Then whether you were right or wrong you will have learned a lesson, you will remember it, and you will be wiser. But if the answer coincides with one of your many "might have beens," you have merely increased your unfruitful complacency and learned nothing.

I cannot tell you how to make a diagnosis, but in your review of the facts as you collect them, and when you have assembled them, two questions will be passing through your mind: "What is the anatomical site of the trouble?" and "What is its pathological nature?" A correct reply to either will go a long way to answering the second, for each organ or tissue has its own diseases, and each type of disease has certain sites of selection. If you are certain that a swelling in the neck is an enlarged cervical gland, you have, for practical purposes, only to distinguish between tuberculosis, Hodgkin's disease and secondary malignant disease in order to make a diagnosis. If the swelling is a cold abscess, the site of its origin will be either in the glands or the cervical vertebræ. Bear these two questions in mind throughout. The history may answer one or the other. The characters of the pain will, for instance, in many cases, indicate unmistakably the site of its origin; its anatomical distribution may point clearly to the kidney or one of the peripheral nerves, its association with food to the stomach, or with micturition to the bladder. The history again may indicate the nature of the lesion; progressive loss of weight, strength and colour, without any other symptoms, in a man of 50 suggest a cancer somewhere in the abdomen, and our thoughts turn to stomach and colon; intermittent severe colicky pain suggests a mechanical obstruction, a constant dull ache points to an inflammatory lesion; in each case if we have already deduced the organ involved, our choice of diagnosis lies within narrow limits. While making the physical examination we have the same two queries in mind. A swelling connected with the carotid sheath cannot be moved vertically, nor will it do so on swallowing, but it can be moved from side to side unless the sterno-mastoid is made to contract, when it will become fixed. An enlargement of the thyroid will rise on swallowing, and can be pushed up and down, but very little from side to side. Both characters are a sequel of the fascial connections of the two structures. Enlargement of the kidney and spleen is unmistakable, if we find certain characters about them. The pathological nature, too, of a swelling will often follow from its physical characters. A cold, painless, fluctuating swelling on the surface of the body, dull to percussion, will be a synovial or lymphatic dilatation if it is translucent, a cold abscess if it is opaque. As your knowledge of disease increases with experience, your selection will in each case become more accurate. Diseases are many, but all come into five groups—the developmental, the traumatic, the infective, the degenerative, and the neoplastic. Bearing this simple list in mind you can make a diagnosis in every case, and if you make it with careful thought and due reason, and commit yourself to that as your opinion, you will have gone far on the way to lay the foundations of clinical wisdom.

I should like to conclude by a few words on the value of association. We may receive information by the ear or the eye, but we do not acquire it

unless we fix it by association in the cerebrum. We may sit by the wireless while a lecture pours out of the loud-speaker, but the words merely flow over the surface of our minds like water over the bed of a stream, producing no more effect than the rattling of pebbles. We may hear the same lecture under other circumstances, and something, the personality of the speaker, some apt illustrations or experiments, or the surroundings, serve to fix every part of it in our memory. Our sources of information, therefore, should not be too copious for attention, and they should be carefully chosen and diligently used. Do not read too much, but take Bacon's advice, " Read not to contradict and confute ; nor to believe and take for granted ; nor to find talk and discourse ; but to weigh and consider." And take a similar course with your teachers. A man who once interested you ceases to do so ; you have become familiar with his voice, his point of view, his favourite stories, and though you continue to listen you have ceased to associate, and therefore to learn. Go to someone else, and in another ward listening to a fresh voice you will remember teaching that from the former source would have been soon forgotten. I, for one, hope that the interchange of teachers and students which is now undergoing tentative trial in a few London hospitals will be developed to its full, so that we may in the end attain the full freedom of the German universities.

The Possibilities of Treatment in Early Mental Disorder

A Paper read to the Guy's Hospital Physical Society on Thursday, October 31st, 1935, by W. Lindesay Neustatter, Esq., B.Sc., M.B., B.S., M.R.C.P.

MR. CHAIRMAN and GENTLEMEN,—I feel very flattered at being invited to address you to-day, just as I am honoured at being allowed to work at this hospital. This is all the more so because my previous experiences of Guy's were both of them of an unhappy nature. My first acquaintance with your hospital was at the Final M.B., when an apparently kindly white-haired physician of yours led me up to the side of a child's cot and then, with a few seemingly guileless questions, also led me up the garden path. My second association with Guy's was when I specially returned from a holiday to play against you in a cup-tie. The game, as far as I was concerned, consisted in dropping a catch, having some sixty runs knocked off my bowling for no wickets in three overs, and being cleaned bowled first ball. However, the honour of working at this hospital, I am pleased to say, has removed the bitterness of my memories.

This change of attitude on my part is a suitable introduction to what I want to speak about, for it might be said that our whole aim in treating mental disease is to induce the patient to return to a normal outlook on life. After consultation with your secretary, Dr. E. T. Conybeare, we decided on this topic because I cannot help feeling that it is a very important one. As it is one which is very much in the air—extremely hot air, I regret to say, as far as some psychologists are concerned—I thought it might be of interest to you to try and discuss what can be done as far as possible from a realistic point of view.

In discussing the treatment of early mental disorder the first thing to be done is to define what is meant by the term " mental disorder." In popular usage it signifies insanity, or, to be more technical, psychosis. On the other hand some people argue that all neuroses should be included under the term " mental disorder." If you do this you can, of course, claim very much better results for treatment, as you include a number of minor disturbances which would probably have cleared up in any case. It seems to me that it is not justifiable to include every slight or transient neurotic manifestation which human beings can display. For one thing, if we included these then we should have to include every one of ourselves. I think from the point of view of this paper I shall define mental disorder as including the psychoses as ordinarily understood, and the severer manifestations of neurosis, such as obsessional conditions, anxiety states, hysteria, anomalies of sexual function and reactive depressions.

Now psychiatry includes among its exponents a number of amiable, diffuse-minded individuals who not infrequently give lectures—of a very popular nature—in which they talk about the good work which can be done in the prevention of insanity by " dispelling the dreadful bogey of fear," " removing the horror of anxiety from the patient's life, disciplining his self by suitable environmental changes, building up his super-ego," and a host of other fine-sounding psycho-therapeutic measures. However good their intentions, and assuming they are as successful in applying these measures as they claim, it is difficult to get away from the impression that they are confusing neurosis with psychosis, and going on the assumption that by treating such conditions as anxiety states, reactive depressions, or behaviour

difficulties they are staving off psychoses at a later date ; in other words, that they are treating early psychoses. It sounds very well, but there appears to be very little evidence that they are treating the early stages of psychosis, and not neurosis. It was noteworthy in the war that, although there was an enormous increase in neurosis, the amount of psychosis in the Services was approximately the same as in peace time, which would not hold good if neurotic symptoms led on to psychotic ones. I am not saying that it is not possible to confuse the two conditions, and mistake an early psychosis for a neurosis, but this does not, I trust, occur frequently enough to allow us to claim that in treating the neuroses we have avoided psychoses.

Apart from this, I cannot help feeling that the individuals who prescribe the therapeutic procedures I have outlined can very rarely have followed their cases up in at all a critical spirit, or if they have then I think the results of their treatment must be the outcome of their fantasy life rather than based on the reality principle.

Now, I do not want you to think that I am being unduly pessimistic, but I feel that the cause of psychiatry and therapy in this branch of medicine would be much better served by a cautious and critical review of what can be done than by uncritical optimism.

After this somewhat lengthy diatribe let me attempt to get down to something more " factual." I have already defined mental disorder as I am going to employ it. The next step is to define what is meant by therapy, which to one person means a five-year Freudian analysis and to the other depriving the patient of teeth, tonsils, sinus, gall-bladder and colon, and any other organ the surgeon can lay his hands on. Actually therapy can be divided into psychotherapy, on the one hand, by which is meant psychoanalysis, persuasion, re-education, hypnosis and suggestion, and physical measures, on the other hand, which are directed (*a*) at removing sources of infection, (*b*) at producing glandular changes, (*c*) at producing sedative or stimulating effects—largely by drugs, and (*d*) pyrexial treatment.

Turning to the question of early mental disorder, the first problem is to define the term " early." As a general rule, we think of " early " in terms of a slow development of the pathology of a disease, as in the first signs of the insidious onset of tuberculosis. We do not usually talk of " early " where there is the rapid development of a pathological process, as in pneumonia. The problem that confronts us in psychiatry is to determine what are the " early " stages.

Certain psychotic conditions, such as mania or an acute depressive illness, may come on out of the blue. On the other hand, the attack may last several months to several years, and here the term " early " might be applied as meaning soon after the onset, although the disease has reached its maximum intensity rapidly.

The problem is further complicated by the fact that an illness such as a manic-depressive attack or an acute schizophrenic episode may arise suddenly, yet if we take the history of such a case, we may find that the previous personality is in keeping with the illness, which appears as an exaggerated version of what the patient was previously. That is to say, the manic-depressive patient gives a past history of suffering from depression alternating with moods of cheerfulness and activity, but neither extreme passing the bounds of that rather indefinite standard which we call " normal."

Where, then, does early treatment come in this case? The question is difficult to answer, because in dealing with the pre-psychotic personality we are dealing with a condition which is indistinguishable from that of a great number of people who never become psychotic. Similarly with the schizoid personality. By this I mean the type of person who is solitary, a bad mixer, withdrawn into himself, dreamy, often with a feeling of inferiority, often unduly suspicious of other people or exhibiting odd mannerisms—to cite a few of the characteristics displayed by the schizoid.

(For clarity I should explain that schizophrenia is a term used in place of dementia præcox, which may be more familiar to you. It is a preferable term, as by no means all cases showing the " dementia præcox " syndrome become demented, nor does the condition necessarily commence in adolescence.)

Mapother, in a paper on prognosis, gives it as his view that schizophrenic episodes in young people are not uncommon, and have on the whole a good prognosis. Are these cases the same illness which becomes a chronic dementia præcox? At their commencement they may be indistinguishable.

These are some of the difficulties with which one is face to face in attempting to assess what can be done in the way of early treatment.

To return, then, to the question of what we mean by " early " treatment. For convenience this can best be discussed under the following headings :—

(*a*) At the stage of a disorder which affords suspicions of the early stages of a psychosis, *i.e.*, pronounced abnormality of character, though still not clearly psychotic.

(*b*) Early on during an unmistakable psychotic phase.

TREATMENT IN AN EARLY PSYCHOTIC PHASE

Dealing with the latter first, various types of treatment have been adopted. They can be divided into (1) the psychological and (2) the physical.

Psychological Methods. This includes treatment along psycho-analytic lines, persuasion, suggestion, hypnosis, adjustment of environment, and occupational therapy, to instance some methods which can be tried. The last two are in some ways the easiest to apply. Occupational therapy, which, consists of letting the patient do leatherwork, woodwork, gardening, clerical work, etc., assists in occupying the patient, in some cases arousing his interest, and often preserving his self-respect.

As regards environment, in some cases hospitalisation and trained nursing are of undoubted value, but in the more insidious diseases, as schizophrenia, the avoidance of hospitalisation may save the patient from deteriorating. In a case like this I would say that psychotherapy was undoubtedly of value. It is very important for the patient to feel that he has a sympathetic adviser to turn to, and the doctor can play a valuable part in this capacity. It is quite possible to get a patient to "live with his symptoms," and, even though deluded or suspicious, to keep him going to an extent that he can still work. I am enlarging on the details of this treatment later in dealing with pre-psychotic personality.

Psychotherapeutic procedures, especially analytic ones, are very often impossible in psychotic conditions, owing to the inaccessibility of the patient. Psychotics often cannot attend sufficiently to be hypnotised, but an ingenious doctor hypnotised an attendant so as to condition him to be roused from sleep only by movements of his patient!

Physical Methods.—Various physical methods have been tried. In discussing these I shall ignore the ordinary medicinal methods employed in producing sleep, allaying restlessness, etc., as this is purely symptomatic treatment familiar to you all. I should remind you, however, that in psychotic conditions associated with myxœdema we have a specific in the administration of thyroid. At the same time it is well to remember that thyroid has no effect in the other psychoses, though given in large quantities to stuporose schizophrenics it is said temporarily to rouse them.

Of other physical methods which have been tried, mention must be made of attempts to deal with focal sepsis. Cotton claims that by removing all septic foci he has secured a recovery rate of 85 per cent. against 35 per cent. of untreated patients. He finds septic foci throughout the body. For instance, in the stomach he finds diminished hydrochloric acid plus bacteria, to which he attributes the toxæmic condition. When we remember that not only can emotion inhibit the secretion of hydrochloric acid, but that perfectly normal people can have achlorhydria, then the objection becomes apparent that the condition may be *post-* and not *propter-hoc*, or may have nothing to do with the psychosis at all.

The colon comes in for a lot of abuse, not the least, in my opinion, being total resection of that unfortunate organ. Of a series of 133 cases who were mutilated in this fashion, 33 recovered and 44 died.

Kopeloff and Kirby, taking two comparable groups of approximately sixty cases, removed septic tonsils in one group. They found that there was no higher recovery rate in this group, and that in both groups the cases improved in accordance with the prognosis made at the beginning of the attack.

French cites two cases who recovered after draining the sinus, and Moynihan reports recoveries after surgical treatment of septic colitis and gastric ulcer.

When one realises the frequency of depressions following on illnesses like influenza or jaundice, it is not unreasonable to assume that a toxic cause may be at work. But it seems to me that there must be demonstrable evidence of sepsis before we give the surgeon *carte blanche* to do a complete evisceration!

Having dealt with procedures which aim at removing sepsis, perhaps this would be a suitable moment to turn our attention to methods which go to the other extreme, namely, to produce sepsis artificially. This may sound a little surprising, but is founded on the curious phenomena which intercurrent illness can play in the psychoses. Thus cases are on record in which a dementia præcox recovered after several years following an attack of enteric fever. A paralytic had a complete remission after an axillary abscess. A depressed stuporose case of three years' standing cheered up after a considerable loss of blood following a ruptured hæmorrhoid.

Artificial sepsis has been produced by injecting 12 c.c. of turpentine. This was tried on 257 cases. The result of the experiment was that many of these cases improved physically, they became less agitated, less impulsive, and their hallucinations improved. In spite of these results, I have never seen this method myself, nor, I am glad to say, have I seen the wholesale surgical measures described previously, employed. On the other hand, for no apparent reason at all, a man I had under my care who had lain mute for thirteen

years suddenly spoke. I could not have been more astonished if the furniture had begun to talk!

The other important physical method of treatment is by pyrexial therapy, the most commonly used method being malaria, though protein shock, diathermy, electric blankets and relapsing fever have also been used to this end.

As you know, it is in G.P.I. that pyrexia is of particular use. It has been tried in dementia præcox, but without result. In G.P.I. this method of treatment is of paramount importance. For some time there has been considerable dispute how far malaria helps in G.P.I., and I thought it might be of interest to furnish a few figures.

Two groups of G.P.I. of approximately 1,170 cases were watched over ten years. One group was treated, and the other was not. Of the untreated, 88 per cent. died and 3 per cent. were discharged; of the treated, 34 per cent. died and 25 per cent. were discharged.

Nicole found good remissions in his own, and successful results occurred in about 30-36 per cent. of the cases. Those under fifty did best.

Of the cases treated by Nicole he found that those which did best were the ones which were treated within the first six months, and of the different types of the disease those which did worst were the simple dementia types. The reason these had the worst prognosis was probably because it was the most insidious form of the disease, and consequently escaped attention the longest. It is important, therefore, in the middle-aged who are brought to you because of slight nervous symptoms found to be associated with subtle character changes, to be on the look-out for G.P.I. A falling off in intellectual ability combined with an Argyll-Robertson pupil and slurring of speech are clinically diagnostic, and may show themselves early. I do not suggest that in practice you take the Wassermann of every middle-aged person with neurotic symptoms, for, as my old chief, Dr. F. J. Poynton, used to say: "When the vicar's wife comes to you for attacks of giddiness, don't do a W.R. on the vicar; it gets round the village so quickly." On the other hand, I would remind you that the late Dr. Collier at his demonstrations gave it as a precept, "Always test the patient's knee-jerks, even if he is an archbishop." If there are signs of psychosis in a middle-aged person, be on guard against syphilis. The treatment of G.P.I. is usually carried out with malaria, but B. typhosus vaccines, diathermy and electric blankets have all been used—though apparently not as successfully—for the induction of pyrexia. After about ten rigors the malaria is stopped by quinine, and a course of arsenic is given.

TREATMENT OF THE PRE-PSYCHOTIC PERSONALITY

Having dealt with the early treatment in the sense that it is to be hoped that treatment has been instigated early in what is taken to be the fully developed psychosis, the other question is to consider the treatment of the pre-psychotic personality. I think, without being prejudiced, that I may say that it is in this realm that psychotherapy can be very useful. Obviously questions of general health should be dealt with, but as the psychiatrist is usually the last person the patient reaches, these matters will probably have been gone into. As regards psychotherapy, our aim should be to help the patient to adjust himself. In a number of cases I think an analytic approach is a good one. By an analytic method I do not necessarily mean a full Freudian psycho-analysis, but working along lines of investigating the patient's past history and using free association when necessary. My reason for preferring this method is that in most cases I think you will find that the psychological troubles are endogenous, *i.e.*, you will find the patient's depressions, fears and suspicions are arising from factors inside himself and not the outside world; wherever he goes or whatever he does, you find he is reacting along the same lines. Consequently, external adjustments will not help.

Freud claims that a certain number of cases having a regular cycle of depressions cease to have their attacks after an analysis during a free period. This is of interest, as he does not claim that psychoses are amenable to analysis. It is obvious that in assessing the results of treatment in a pre-psychotic phase we are face to face with the difficulty (in spite of Melanie Klein's assertion that possible adolescent schizophrenia was averted by analysing a child of five!) that if the patient never develops psychoses we cannot be sure it was due to our efforts. This is rather supported by the fact that, as I stated previously, although neurosis increased considerably during the war amongst those on active service, the incidence of psychosis was approximately the same as in peace time.

In spite of this, I think psychotherapy is of value in these individuals; if it does nothing else, it makes them happier, and in the insidious psychoses as schizophrenia it may keep symptoms in check.

Schizophrenia, as I said previously, is typically—though not invariably—a disease of adolescence, in which the individual sinks into himself, becomes progressively more detached from the world, exhibits shy mannerisms, and gradually turns more and more inside himself. This may be combined with depression, excitement or paranoid

features. It is frequently found that these individuals as children have already shown signs of seclusiveness. They are bad mixers, not fond of games, and quite frequently clever. How far schizophrenia is organic or psychological we cannot at present tell, and how far it is amenable to psychological treatment it is difficult to say, though cases are reported—and I have seen cases —which got better while under psychological treatment. Whatever the cause, it is possible reasonably to argue that the removal of psychological stress will be beneficial; even if it does not remove the cause it may remove a precipitating factor. These are the individuals which—especially as children—you can help along psychological lines. The reason that they are so seclusive is twofold: they feel themselves different from others, are afraid of being laughed at, and consequently withdraw into themselves, and as they are sensitive children and frequently worried they hug their worries to themselves and brood over them, and fail ever to get the chance of "getting them off their chest." Moreover, like all sensitive children, they frequently have considerable feelings of guilt, all the more so as they also frequently have sexual fantasies at an early age. (I should tell you at this juncture that it is quite common even for normal people to have sexual fantasies at such an early age as five. If you don't believe me, ask your friends !) This feeling of guilt about sexual matters is very often complicated by masturbation, about which these patients exhibit a great deal of guilt, and one of our first duties towards them is to reassure them of the harmlessness of this practice.

The art of dealing with these patients lies in understanding that they are very timid, and that one must go very warily if one is to gain their confidence. The cheerful, hearty, thump-on-the-back-you'll-be-all-right-soon manner gets one nowhere with them. They are very suspicious of this kind of treatment, which they see through, realising that it frequently betokens nothing more than that the doctor has no understanding of their problems. Once their confidence is gained, however, you will find that they are very willing to unburden themselves, and even if you cannot effect a cure you may get the patient able to continue his occupation, though still exhibiting some of the symptoms of the disease.

If they have delusions—and this applies to other forms of paranoia, apart from that associated with schizophrenia—I think the correct treatment is to tackle them boldly. The patient is very often aware that he is thought funny and that people are sceptical of his delusions and beliefs, and if the medical man displays the same well-bred, party-go-to-meeting manner, and is politely sympathetic in his attempts to pretend that he believes the delusions, the patient is not deceived. I think the right way to deal with them is to say to the patient: "Look here, the question of what is correct or incorrect is largely a matter of interpretation. Now I don't agree with what you say you think has occurred, because to my way of looking at it you are misinterpreting what you see. Let's thrash the matter out." Even in advanced cases of paranoia the patient will frequently respect this attitude (though I prefer to interview advanced cases with a large male nurse present), but in the milder cases they almost invariably respect the attitude, and in a number of cases I think it is possible to rid them of some of their delusions, at least. Having got the patient's confidence, I think it is as well to try and encourage him into social activities, but always with the proviso that they are ones at which he can hope for a reasonable amount of success, or his feelings of inferiority may be increased.

While on the subject of specific treatment, may I give a little practical hint that, if you are dealing with depressed patients, unless there is a very obvious cause for the depression you don't necessarily want to deal with symptoms which the patient is complaining of. Under the influence of depression, one always goes for one's weakest points, and harping on them is frequently a result, and not the cause of the depression. After all, when we are in good spirits we can usually review ourselves with equanimity. Therefore, tell your depressed patient that you will ignore his symptoms and try and get down to the causes—either physical or psychological—which have led up to the depression, and, where possible, ameliorate them; but in the majority of cases you can leave the content alone.

This ends the psychoses proper. The other conditions which remain are the various neuroses described. Possibly I am prejudiced, but I think that physical methods are of comparatively little use. Psychological methods on an average give about 30 per cent. considerable improvement, and another 30 per cent. of moderate improvement. There are very few papers on the subject, though the psycho-analysts have produced one, and Kessel and Hyman in America reviewed thirty-five cases treated by psycho-analysis. The Institute of Psychological Medicine and myself have also each produced a paper, and Mrs. Hardcastle has reviewed the results at this hospital. Roughly speaking, the figures appear to coincide.

Amongst the methods used by the various writers were Freudian psycho-analysis, where the

patient is seen five times a week from six months to several years, analytic procedures where the patient is seen two or three times weekly for three to six months, hypnosis, suggestion and persuasion.

Hypnosis can produce dramatic results—with the right patient—but it also has the disadvantage that, as a colleague of mine expressed it, the less faith you have in it as a satisfactory method the harder it becomes to use.

Personally, in severe cases I favour, and use, an analytic method of seeing a patient two or three times weekly for about forty minutes, lasting over a period of from three or six months, as described above. To begin with, it is necessary to get the patient's confidence, then it is necessary to go through groundwork in the way of laying bare the events, experiences and feelings that have led up to the present neurosis, and in most cases this simply *cannot* be done quickly.

I think it is very important to emphasise that in most cases revealing the history of a condition is *not* tantamount to effecting a cure. Events may have happened in the past, but the feeling attached to them is in the *present*. As one goes through the patient's past life one " touches him up " and gets him " on the raw," and reawakens emotions that have been quiescent but apparently had disappeared.

These emotions show themselves as abreactions, as instanced in the case of soldiers who in the consulting room revived forgotten experiences in the trenches. In civilian neuroses you rarely, if ever, get these dramatic abreactions, but the emotions display themselves by the patient's reactions to present-day situations, generally, but not invariably, in his attitude towards the treating physician. Technically this attitude of the patient, conditioned by past and not present stimuli, is known as a " transference situation."

It may strike you as unreal and unreasonable that this should occur, but we do not always direct our emotions to the appropriate cause. It is everyday experience that the " morning after " we are in a state of quite unreasonable tension, in which our emotions well up at all sorts of normally unoffending objects; neither are our emotions always directed to the correct cause. When the boss goes for the clerk the latter does not go for him, but kicks the office boy.

Suggestion and hypnosis and persuasion can be used alone, or very usefully towards the end of an analysis. As I said, for suggestion and hypnosis you gain if you have the right personality. Possibly I have a predilection for analytic methods on these grounds. At any rate, I know that some years ago while cruising I found my deck-chair next to that of a very large lady missionary. (I think I had forgotten to tip the deck-steward.) She asked me what I was. I tried to stave her off by saying I was a psychiatrist, but this conveyed nothing to her, as I suspected, but she still pressed to know what I was. I replied that I " did psychological medicine." She looked me up and down, and then said in a cold, booming voice: " Oh, but that needs a lot of personality, doesn't it? "

As regards the question of early treatment of neurosis, the same point arises as with the psychoses. Some conditions—anxiety attacks, obsessions and hysteria—may come on suddenly. I am not convinced that treatment after an interval is necessarily any less effective than when it is instigated immediately.

In following up results at the Maudsley I came to the conclusion that chronicity in relation to prognosis was not as important as one would expect. I should say that in personality difficulties early treatment was of the greatest value, because they so frequently mean difficulties of social adjustment, which in turn react on the condition to its detriment, thus setting up a vicious circle.

Finally, if we review the recovery rate in mental hospital patients we find they compare quite favourably with those of medicine. An analysis of about a thousand patients over ten years in mental hospitals showed that approximately 25 per cent. improved to the extent of discharge, and had not relapsed, and another 15 per cent. improved enough for many of them to be at work, but included cases which had had a relapse. This may not be a very high figure, but for those who are inclined to regard psychiatric results too pessimistically I would recall what I once heard a neurologist say to a general physician, who remarked that neurologists never did anything. His answer was that it was all very well for the general physician to talk, but *his* unsuccessful patients died, while the neurologist's remained as a perpetual reproach, because they lived. In the same way the patients who have psychotic or neurotic disorders generally remain with us.

I have naturally not been able to go into all the numerous questions very fully, but I have attempted to give you a brief outline of what can be done. As the chances of an individual being certified during his or her lifetime is 1 in 35, and according to Dr. Gillespie's estimate approximately 1 in every 13 persons suffers from a severe enough neurosis to call for treatment, you will realise how important it is to try to prevent and to treat these conditions.

Correspondence

The Child-Play Clinic

To the Editor of the GAZETTE

SIR,—We have just started a Child Play-Clinic in the Department of Psychological Medicine at Guy's, both for research and therapeutic purposes. We should be exceedingly grateful for gifts of old or new toys, especially dolls, dolls' prams, trains, meccano sets, soldiers and waggons, etc. We could also find great use for "dressing-up" clothes and material suitable for the same.

Gifts should be sent to me, addressed to the Department of Psychological Medicine, Guy's Hospital.

Yours, etc.,

R. D. GILLESPIE.

Guy's Hospital,
S.E.1.

Meetings with Physical Society

To the Editor of the GAZETTE

SIR,—We, the undersigned, would like to take this opportunity of announcing to your readers that, with the very kind and helpful co-operation of Dr. Gillespie and the members of the Psychological Department at the Hospital, we have arranged a series of meetings, which will be held in conjunction with the Physical Society on Thursday evenings, at 6 o'clock, on the following dates (other circumstances permitting):—

1935—November 21st.
December 5th.

1936—January 9th.
February 6th.
February 20th.

Papers will be read at these meetings, either by a member of the staff of the department or by a student, in which case the chair will be taken by Dr. Gillespie or one of his assistants.

In addition, it is hoped that Dr. Gillespie will read a paper later in the year to a meeting to be held jointly with the Physical Society. Details of this and other meetings will be posted in due course.

Yours, etc.,

F. L. D. YOUNG.
B. DeDJANOGLY.
W. HOWARD CLARKE.

Guy's Hospital,
S.E.1.

Guy's Hospital Musical and Operatic Society

ALTHOUGH the main object of an amateur orchestra is the fun of music-making, the ability to entertain others is the sign of success. With the help of the distinguished artists Mr. Augustus Milner and Mr. Herbert Templeman, the Guy's Hospital Musical Society in their concert on October 24th and 25th demonstrated a successful season by delighting an enthusiastic but too select audience.

This was their second orchestral concert, and the first thing that struck one was the unexpectedly large size of the orchestra and the small number of professionals on which they had to rely. This was especially noticeable in the brass and wood-wind, which are only too often the silent spots in an amateur ensemble. The concert opened with the Introduction and Prelude to "Carmen"; we much admired the spirited attack with which this work was played, but it is undeniable that it made us realise that the acoustics of the Physiology Theatre are even less adapted for orchestral purposes than those of the Albert Hall. In fact, the repercussions of sound, especially of the drums, were as difficult to trace as the most complicated cannon off the red. This, however, rendered contrast of Mr. Forgac's flute obligato the more marked. The Slavonic Dance No. 6 (Dvorak) was an excellent choice and was played with accomplished ease. Mr. Milner then sang in French Moussorgsky's "I have the power," from Boris Goudonov, which illustrated his dramatic power as an operatic singer. He followed this with Tschaikowsky's "Don Juan's Serenade," to which romantic work he did ample justice. The orchestra continued with a further work from Tschaikowsky—the Adagio from the Fifth Symphony. This showed how well they had overcome what is always a difficulty for amateurs, the sustaining of rhythm in a slow movement; the precision of the brass was excellent.

The second half of the concert opened with Goldmark's Overture to "Sakuntala." Although this was the most ambitious item of the evening, we felt that it was an unsuitable choice, owing to

its length, its technical difficulties, and its small musical worth. The Vivaldi Violin Concerto, on the other hand, which followed, was the undoubted success of the evening. This was music of a very high order, to which both the orchestra and audience readily responded. Its clear-cut form and the fact that it is scored only for strings and piano completely overcame the acoustic difficulties. The playing of the solo part was first-class, and the orchestra, led with such mastery, performed with a nice confidence, for which it was deservedly encored.

Mr. Augustus Milner then sang Schumann's "Du Bist wie eine Blume," followed by the "Two Grenadiers," both songs which showed his fine range of voice, but the charming intimacy with which he sang "Trotting to the Fair" as an encore, confirmed our opinion that this is a better song than either of the others.

The concert ended with "Shepherd's Hey." There was some untidiness over the "Hey" in the first few bars, but once they got on to the "Ho" they proceeded with a rustic vigour that out-"unbuttoned" Beethoven. We would have liked an encore, but realised that, like the wise comedian, who always gives nearly but not quite enough, the orchestra had compelled us to wait with eagerness for when they play again.

We feel that this surprisingly good orchestra must owe much to the ability and zeal of their conductor, Mr. Siggers; in performance he nursed his players well, but we thought that he did not make sufficient use of his undoubted familiarity with the score to command the eye of his orchestra —but perhaps he knew them too well. Both the Society and the audience owe a great debt of gratitude to Mr. Augustus Milner and his wife, who so ably accompanied him, and to Mr. Herbert Templeman for giving so much of their valuable professional time both at the performances and rehearsals to the cause of bringing artistic light to the scientific darkness in which, through force of circumstance, we are too much enveloped.

It is regrettable that there were not greater numbers to augment the enthusiasm of those who came; it seems certain that this is a defect that will be remedied with time. The Society may remember that there was a time when the Promenade Concerts did not pay.

G. B.

Guy's Hospital Biennial Dinner

FRIDAY, NOVEMBER 15TH, 1935

LIST OF GUY'S MEN WHO HAVE SIGNIFIED THEIR INTENTION TO ATTEND THE DINNER

1873—1879

1873 Nash, Wm. Gunner.
1876 Oram, Richard R. W.
1879 Hale-White, Sir Wm.
Howell, T. A. T.

1885—1899

1885 Goodall, E. W.
1887 Brock, George.
Browne, Surg.-Capt. R.
Pearce, F.
1888 Holman, F. Kay.
1890 Pilcher, E. M.
1891 Jewell, J. W. F.
Hopson, M. F.
1893 Alston, W. E.
Eyre, J. W. H.
1894 Eastes, G. L.
Hovenden, Arthur.
Hovenden, Gerald S.
1895 Clarke, Astley V.
Steward, F. J.
Vellacott, P. H.
1896 Fagge, Chas. H.
Howe, A. F. A.
Spicer, A. H.
1897 Way, M.
1898 Alexander, K. B.
Swan, R. H. J.
1899 Berncastle, H. M.
Ruzzak, Lt.-Col. S. A.

1900—1909

1900 Brydone, J. M.
Goble, E. W.
Goadby, Sir Kenneth.
Parrott, H. M.
1901 Lewin, George.
Thompson, A. R.
Tillbury, R.
1902 Odgers, P. N. B.
Pinching, Charles.
Cooper, J. Sephton.
1903 Goldie, E. G.
1904 Hughes, E. C.
Hurst, A. F.
May, Wm. N.
Mollison, W. M.
Sheaf, E. W.
Stevenson, C. M.
Stewart, B. H.
Ticehurst, G. A.
1905 Cameron, H. C.
Palmer, F. W. Morton.
Payne, O. V.
1906 Bankart, A. S. B.
Litchfield, P. C.
Palmer, A. S. Morton.
1907 Densham, A. T.
Goodhart, G. W.
Laidlaw, Sir Patrick.
Palmer, B. H.
Reynolds, R. J.
Ripman, C. H.
Watson, J. N.
1908 Ryffel, J. H.
1909 Attwater, H. L.

1910—1919

1910 Barber, H. W.
Bromley, Lancelot.
Elliott, E. L.
Gardiner, H.
Hind, G. R.
Mullally, G. T.
Cox, A. Neville.
1911 Cook, Frank.
Doubleday, F. N.
Marshall, Geoffrey.
McNair, A. J.
Witts, L. J.
1912 Genge-Andrews, G. E.
Hoby, H. J.
Housden, C. H.
Jepson, A. C.
Reynell, W. R.
Slesinger, E. G.
Smyth, W. J. D.
1912 Zamora, A. M.
1913 Lane-Roberts, C.
Mather, H.
Morgan, O. G.
Ogilvie, W. H.
Ozanne, R. C.
Ryle, J. A.
Tanner, W. E.
Wright, L. D.
1914 Boswell, P. R.
Harkness, A. H.
Pedley, C. F.
Scott, Eric.
Pritchard, G. B.
Reynolds, Major W. L. E.
Sharpe, H.
Starling, E. C.
1915 Curle, R.
1915 Lloyd, V. E.
Symonds, C. P.
1916 Campbell, M.
Heckels, G. W.
Jones, J. Gaymer.
Phillips, E. S.
Wacher, H. S.
Withers, S. A.
Conybeare, J. J.
1917 Gower, W.
1918 Spencer-Payne, A. L.
1919 Braithwaite, J. V. C.
Brown, H. M.
Dowling, G. B.
Fenn, H. B.
Lansdown, R. B.
Payne, W. W.
Sawday, A. E.

1920—1929

1920 Burvill-Holmes, L.
Doherty, W. D.
Gillespie, R. D.
Lindsay, G. P.
1921 Hodgkinson, R. J.
Shaw, M. E.
Shelswell, A. H.
1922 Hale-White, R.
Harris, T. A. B.
Hudson, J. A.
Stoker, G. M.
1923 Ballard, R. C.
Boland, E. R.
Canning, H. G. R.
Gibberd, G. F.
Ive, C.
Lane, R. E.
Lloyd, N. L.
1923 Millis, G. C.
Mitchell, G. O.
Rumsey, H. St. J.
Scholefield, B. G.
1924 Hunt, W. S.
Spurrell, W. R.
Trott, L. A. S.
1925 Jago, M. E. M.
Landon, G. S.
Lysaght, A. C.
Riddolls, A. W.
Simons, J.
Simpson-Smith, A.
Skeels, P. B.
Strong, S. V.
Whimster, W. S.
Worthington, C. L.
1926 Greenwood, E. J.
Jarman, R.
Marshall, C. W.
Schabort, J. W.
Trick, S. R.
1927 Gaussen, H. S.
Hampson, A. C.
McConnell, W. S.
Warner, E. C.
1928 Blaikley, J. B.
Glanvill, R.
Harley, H. N. W.
Jones, W. D. Glynn.
Stamm, T. T.
1929 Brocklehurst, T.
Morris, I. B.
O'Donoghue, R.

1930—1935

1930 Krusin, F. S.
Simpson, C. K.
1931 Batchelor, J. S.
Berkeley, E. A. R.
Clarke, A. Ruscoe.
Constable, H. A.
Erskine, D.
1931 Lintott, G. A. M.
Todd, T. F.
1932 Atkins, H. J. B.
Baker, C. G.
Fagge, Hilton.
Grace, A. J.
1932 Irish, D. H.
1933 Holman, F. G.
Robin, I. G.
1934 Alexander, P. C.
Cameron, H.
1935 Kramer, G. B.

All Guy's men, qualified Medically or Dentally, are eligible to attend. Those who wish to be present, and have not already sent in their names, should communicate *at once* with the Hon. Secretary, Dr. Geoffrey Marshall, 45, Wimpole Street, W.1.

POSTGRADUATE LECTURES AND DEMONSTRATIONS

November 15th and 16th, 1935

REVISED PROGRAMME

Friday, November 15th—

12.0—12.45 p.m., Dr. C. P. Symonds—"Head Injuries."

2.15—3.0 p.m., Dr. A. F. Hurst—Demonstration of Medical Cases.

3.15—4.0 p.m., Mr. C. Lambrinudi—"Pain in the Back."

4.0—4.45 p.m., Tea in the Court Room (Front Quadrangle).

4.45—5.30 p.m., Mr. Frank Cook and Dr. P. M. F. Bishop—"Hormone Therapy in Gynæcology."

Saturday, November 16th—

10.30—11.15 a.m., Mr. W. D. Doherty—"Carcinoma of the Rectum."

11.30 a.m.—12.15 p.m., Dr. H. C. Cameron—"Common Disturbances of Digestion and Nutrition in Childhood."

SPECIAL NOTICE

These Lectures and Demonstrations, which will be given in the *Clinical Theatre*, have been specially arranged for the benefit of those attending the Biennial Dinner. All Old Guy's men will be welcomed, whether they have previously notified their intention of being present or not.

Sport

Rugby

Guy's v. Aberavon

FOR the first time since 1922, Guy's decided to have a week-end tour, and on Saturday, October 19th, they met their old friends at Port Talbot and, after a very interesting game, were defeated by a placed goal and a penalty goal and 2 tries (14 points) to a placed goal (5 points).

The meeting between Aberavon and Guy's is one of the most popular fixtures with both sides, and the home supporters gave the Hospital one of the most enthusiastic receptions given to a visiting side.

Those who braved the unpleasant weather conditions saw a magnificent game, full of thrills and, in spite of the wind, football of the first class.

With Steytler and Stewart of the back division injured, Guy's were unable to field a full side, but their substitutes fully atoned for their absence and did exceedingly well to hold their opponents so close.

Helped by a strong wind, Guy's had most of the play in the first half, but they could not penetrate a wonderful defence in which James, J. Thomas, and Randall, the Welsh trials, stood out by themselves.

The first half was evenly contested, and play went from end to end at a terrific pace. First the Hospital forwards attacked and then the Aberavon backs broke away, but the defence was magnificent and the tackling deadly.

The home side were the first to threaten the Hospital line, and after T. O. James had missed a penalty, a great forward rush ended when E. Jenkins was kept out a yard or two from the line.

However, after 25 minutes' play, the Aberavon outsides excelled in the loose, and J. Thomas made a great dash for the line, in which he scored a try in the corner which James converted.

This success was quickly challenged by the Hospital and, following a magnificent bout of passing, Dick created a fine opening for Birks, who ran through for a great try, to which Kark added the goal points.

Guy's continued to press, but, although their forwards carried out several dashing raids during which their backs participated in many combined movements, they could not get through, and the interval arrived with the scores level.

In the second half, Aberavon took full advantage of the wind and drove home many thrusts through Morgan Baker. Their forwards set out to shatter the Hospital's defence by furious rushes, but the Guy's defence was equal to the occasion and held out.

It was during an inspiring period of play by the Aberavon forwards that the home team were able to force home their advantage, and in one of these raids Guy's conceded a penalty and T. O. James made no mistake with the kick.

The sturdy opposition offered by Guy's rather put the home team off their mettle, but they came again after a fine combined movement, and J. Thomas crossed for an unconverted try.

After this, Guy's played with wonderful energy and enthusiasm, tackling like giants and extending themselves to the last minute of the game.

A great effort by Wright and Dick nearly led to a try when Wright made a brilliant run along the touch-line, only to be brought down five yards from the line.

Guy's were by no means finished—forwards and backs did their utmost to break through Aberavon's defence, and the most fearless tackling and fielding were needed to keep them out.

However, the home defence was impregnable, and, after Guy's had pounded away at their line, Aberavon broke away again and in the last minutes of the game scored another unconverted try through S. Williams, following a glorious passing movement in which the entire back division participated.

It was a magnificent game, and the spectators gave the Hospital a rousing reception at the finish.

After the match, the Hospital were entertained to dinner by the Club, and a special concert was arranged for their benefit prior to their departure to Porthcawl, where they stayed before their match with Neath.

Team.—C. Halamandres; C. G. Wright (Capt.), R. C. S. Dick, P. H. Birks, R. M. de Gregory; A. E. Baxter, K. A. Stanyon-Jaques; P. Fletcher, A. J. Drew, M. R. Kark, E. B. French, E. R. Davies, W. F. Fraser, I. G. Robin, R. O. Yerbury.

Guy's v. Neath

AFTER a week-end at Porthcawl, Guy's completed their tour with a match against Neath on Monday, October 21st, but suffered a heavy reverse by 3 placed goals and 5 tries (30 points) to a placed goal and 2 tries (11 points).

The Hospital made three changes in the side which did so well at Aberavon; Rees was brought in on the left wing to the exclusion of De Gregory,

and Whitteridge and Harrington came into the pack in place of Robin and Drew.

Neath were strengthened for this particular game by the inclusion of Matthews, of Bridgend, on one wing, and J. Bevan, of Cwmavon, on the other, and E. Bevan (Amman) as scrum half.

In direct contrast to the game at Port Talbot, where the Hospital outsides were supreme, it was the pack who took command of this game, but the backs were right off form and not only did they defend poorly, but they failed to take advantage of the many opportunities offered by their forwards.

The Guy's pack played a wonderfully inspired game throughout, and so marked was their superiority that they chose to take scrums in preference to lines-out. In spite of this advantage the backs were woefully weak, and both Baxter and Birks were unable to do themselves justice.

It was a fine, clean, sporting contest, played at a fast pace from beginning to end, and at times the game reached a particularly high standard. Although the home side were superior in the line-out and loose, Guy's not only held their own in the set scrums but hooked the ball nearly every time.

However, Neath had a fly-half of outstanding ability in W. Lewis, who was always a source of menace to the Hospital whenever he had the ball. He scored three splendid tries for Neath, and his elusiveness completely baffled the Guy's defenders, who allowed him to go through on each occasion without being touched.

Guy's suffered a misfortune in the second half when Fraser was carried off with a twisted knee-joint, but, in spite of this adverse, the forwards still held their own.

Tries for Neath were scored by Lewis (3), Bevan, Moore, Matthews and McCarley—Friend converting two and Lewis one. For Guy's—Fraser, Stanyon-Jaques and Baxter scored tries, one being converted by M. R. Kark.

Here again the fifteen received a remarkable welcome and, although heavily defeated, there is no doubt that Guy's created many new friends during their short stay in South Wales.

The thanks of the Club are due to the members of Royal Porthcawl Golf Club, who elected the Hospital team Honorary Members and made their stay so enjoyable.

Team.—C. Halamandres; C. G. Wright (Capt.), R. C. S. Dick, P. H. Birks, G. F. Rees; K. A. Stanyon-Jaques, A. E. Baxter; P. Fletcher, M. R. Kark, J. L. Harrington, E. B. French, E. R. Davies, W. F. Fraser, R. O. Yerbury, S. M. Whitteridge.

Guy's v. Harlequins

AT Twickenham, on Saturday, October 26th, Guy's were defeated by 4 placed goals, a dropped goal and 3 tries (33 points) to a try (3 points).

The Harlequins fielded their strongest available side and, although Guy's held them in the first half, they fell away badly towards the end, when the Quins registered seventeen points in the last fifteen minutes.

During the latter period I. G. Robin was off the field with a damaged leg, and the Hospital forwards were unable to stand up to the onslaughts of the Harlequins' formidable pack.

In spite of the score, the game was one of the best seen at Twickenham this season, and Guy's had far more of the game than the score suggests. Although outweighted, Guy's obtained their share of the ball in the set scrums, but there was a definite weakness at half-back, where Dean was too alert for Stanyon-Jaques and Baxter was unable to make contact with the backs.

Dick and Wright carried out several excellent movements, but they received little support, and the Quins had plenty of time to smother any attacks which appeared at all dangerous.

Guy's started off promisingly by pressing the home side in their 25, but after ten minutes' play Brook intercepted, and, following a combined movement between the Harlequins' threes, Lunden raced over for an unconverted try.

The Hospital retaliated and kept the Quins on the defensive, but Heath got away on the right, cross-kicked and, Stewart missing his man, allowed Anderson to flash through behind the posts for a try which Chapman converted.

A magnificent movement between Baxter, Dick and Wright followed, and Wright went all out for a try behind the posts, but Heath overhauled him on the 25 line and brought him down when a try appeared certain.

After Heath had made a fine run well in the Hospital half, Rees made a great recovery and brought down Dunkley when he had the line at his mercy. Two penalties to Guy's enabled them to establish a footing in the Quins' 25, but Lunden drove them back and, after Anderson had tried a drop at goal, Halamandres intercepted and touched down. However, the Quins pressed home their advantage and, following a scrum ten yards out, Anderson slipped the defence to score an easy try, which Chapman converted.

Stanyon-Jaques made a fine solo effort to get through for Guy's, but he was badly supported, and the Quins returned to the attack. Another good run by Lunden was checked by Stewart, who brought him down on the line, and just before

the interval a great passing movement between the home backs and forwards broke down owing to a forward pass.

Guy's kicked off in the second half and stormed the home line, but made little impression. After Brook had picked up in an offside position the forwards pressed on the Hospital line, but, to everybody's amazement, they failed to score when they had the line to themselves.

Eventually Wright and Dick got away on the right, but Ronald, the full-back, tackled cleverly and saved an awkward situation. After Stanyon-Jaques had made another effort to force his way through, Stewart found touch, and then a great movement between Dick and Wright carried them to the goal-line, but the Harlequins' full-back managed to touch down.

At this period Guy's were going great guns, and had bad luck in not scoring; once again Dick and Wright broke through, but were not quite fast enough to cross the line. Loose play followed and, after Thompson had kicked ahead, Lunden raced up to secure the touch-down.

Guy's again broke through, and when it appeared that Drew was about to score, he threw the ball back and a great opportunity went astray.

Whereas the Harlequins had taken advantage of all the chances that came their way, the Hospital could do nothing right; first Wright made a poor attempt to score a goal from an easy position, and then Stanyon-Jaques was brought down when faced by the full-back. Soon afterwards Robin was injured, and Guy's had to defend desperately. Anderson eventually broke through to score another try, which was converted by Chapman, and Howorth dropped a goal—the ball hitting the cross-bar before passing over. Near the end further tries were scored by Collins and Dunkley, Chapman converting one, and, following a combined movement between Dick and Wright, the former scored a try behind the posts, which Kark failed to convert.

Team.—C. Halamandres; C. G. Wright, R. C. S. Dick, I. McD. G. Stewart, G. F. Rees; A. Baxter, K. A. Stanyon-Jaques; A. J. Drew, E. B. French, M. R. Kark, C. S. Darke (Capt.), P. Fletcher, I. G. Robin, E. R. Davies, R. O. Yerbury.

Guy's v. London Hospital

AT Honor Oak Park on Wednesday, October 30th, Guy's entertained London Hospital, and, after a bright and interesting game, were successful by 3 placed goals (15 points) to a placed goal and a try (8 points).

The experiment of playing mid-week matches with other hospitals is a good innovation, as, apart from the fact that the hospitals are able to keep in touch with each other, the opportunity presents itself to try out promising members of junior fifteens.

On this occasion neither side were at full strength and, although Guy's had out a fairly strong pack, their back division with two exceptions was composed of members of the "A" fifteen.

Although the Hospital were successful, the backs did not come up to expectations, and were not well together. Chapman and Allen had a better understanding, and the latter in particular had a sound defence and kicked well.

Aided by a strong breeze, Guy's set up and attacked strongly from the start, and the forwards pressed for some time. Both sides tried hard to open up the game, but, in spite of the numerous opportunities that came their way, the Hospital backs failed to press home their advantage.

It was left to the forwards to do the scoring in the first half; first Darke and then Fletcher scored tries for Guy's, both of which Kark converted, and Thompson replied with an unconverted try for London.

After the interval London had the wind in their favour, but it was Guy's who scored first. A fine movement between Halamandres and Baxter, who raced together for half the length of the field, ended in Baxter scoring a try, which Kark again converted.

London tried hard to reduce the deficit, but they were unable to do more than score another try through Waterman, which Cooper converted.

Team.—C. Halamandres; G. J. F. Rees, P. H. Birks, A. Baxter, D. M. Douglas; R. D. Allen, D. I. Chapman; C. S. Darke (Capt.), M. R. Kark, E. J. Drew, E. R. Davies, E. B. French, R. O. Yerbury, P. Fletcher, M. Walt.

Squash Racquets

A MATCH was played against the Northampton Chamber of Commerce Club on Sunday, October 27th. The Hospital lost by 2 matches to 3. The results were :—

C. A. Boucher lost to W. H. Metcalfe, 5-9, 9-6, 6-9, 9-0, 6-9.
M. A. Partridge best J. Gordon, 9-4, 9-5, 4-9, 5-9, 9-2.
R. Gilbert-Harris lost to ——, 5-9, 6-9, 5-9
P. W. Clarkson beat B. Denton, 9-1, 9-0, 9-1.
C. G. Baker lost to ——, 7-9, 9-7, 7-9, 6-9.

Guy's beat the Middlesex Hospital in a Squash Racquets match on October 30th by 3 matches to 2. The results were :—

H. G. Cooper lost to P. Conran, 9-3, 7-9, 7-9, 10-8, 9-10.
C. A. Boucher beat P. B. Bishop, 9-5, 9-5, 9-4.

M. A. Partridge beat J. A. Robertson, 10-8, 9-4, 9-3.
A. D. Willis lost to S. Kimpton, 10-8, 6-9, 4-9, 4-9.
P. W. Clarkson beat N. H. Martin, 9-7, 9-5, 9-4.

In a match against St. George's Hospital Guy's won by 5 matches to love. The scores were as follows :—

C. A. Boucher beat J. S. Minnett, 9-4, 9-5, 1-9, 9-5.
M. A. Partridge beat R. E. Jarrett, 9-5, 9-5, 9-4.
A. D. Willis beat H. F. Anderson, 9-0, 9-0, 9-0.
P. W. Clarkson beat B. G. Parsons-Smith, 9-2, 9-1, 9-0.
R. Gilbert-Harris beat N. Vere Hodge, 9-2, 9-5, 9-5.

Hospital Information, etc.

Notice

LIGHT DEPARTMENT

The Light Department is holding a Bazaar for the sale of Christmas Gifts on Saturday, November 30th, at 2.30 p.m. The great success which attended the Bazaar held in 1933 has, it is hoped, sufficiently advertised, if such is necessary, the abilities, skill and ingenuity of past and present students and members of the Staff, but for the benefit of those who were not able to avail themselves of this opportunity of Christmas shopping in 1933 this notice is inserted.

All who are dreading the bustle and rush of Christmas shopping are advised to visit the section of the Light Department situated in Shepherd's House on Saturday, November 30th, at 2.30 p.m., for there a large display of attractive gifts, useful and ornamental, will be sold at practically cost price.

To supply the energy necessary for carrying the parcels home a 1*s.* tea will be served.

Nursing News

The following appointments have appeared in the *Nursing Times* :—

Daymond, Miss G., S.R.N., R.F.N., S.C.M., Night Sister, Kent and Sussex Hospital, Tunbridge Wells.

Williams, Miss M., S.R.N., S.C.M., Night Sister, Woolwich and District War Memorial Hospital.

Twysden, Miss A., S.R.N., S.C.M., Sister Tutor and Ante-Natal Sister, Jewish Maternity Hospital.

Pass List

SOCIETY OF APOTHECARIES OF LONDON.
FINAL EXAMINATION.
October, 1935.

Surgery.
P. D. Lynch.

Midwifery.
F. J. H. D. De Marigny.

Papers by Guy's Men

E. T. Conybeare. Atropic hypersensitivity. *Jour. Clin. Res.*, 1935, xxi, 125.

W. M. Mollison. The operative treatment of vertigo. *Proc. Roy. Soc. Med.*, 1935, xxviii, 1597 ; Sect. Laryngol. and Otol.

Robert Bradlaw. Pathological changes in the jaws of animals. *Ibid.*, 1672 ; Sect. Odontol.

George T. Hankey. Osteitis fibrosa of maxilla and cranium. *Ibid.*, 1676 ; Sect. Odontol.

H. W. Barber Lichen spinulosus with cicatricial alopecia. *Ibid.*, 1547 ; Sect. Dermat.

T. B. Layton. Four cases of orbital cellulitis secondary to nasal disease ; treated by simple incision. *Ibid.*, 1569 ; Sect. Laryngol.

W. A. Mill. Tuberculous maxillary sinusitis and laryngitis. *Ibid.*, 1582 ; Sect. Laryngol. and Otol.

E. H. Richards. Specimens of Handwriting before and after radical mastoidectomy ; Notes of case. *Ibid.*, 1601 ; Sect. Laryngol. and Otol.

C. P. Symonds. Nervous breakdown. *Jour. Roy. Naval Med. Serv.*, 1935, xxi, 315.

R. S. Bruce-Pearson. Recurrent swelling of the parotid gland. *Arch. Dis. Childr.* 1935, x, 363.

J. J. Conybeare. Prognosis of gastric and duodenal ulcer. *Lancet*, 2-xi-35, ii, 1017.

Sir Francis Shipway. Avertin ; an analysis of 1,600 administrations. *Brit. Jour. Anaes.*, 1935, xii (July, No. 4), 150.

Appointment

Frank Rogers, appointed Dental House Surgeon, Bristol General Hospital.

Birth

WILKINSON.—On October 22nd, 1935, at 4, Overcliffe, Gravesend, to Catherine, wife of Frederick T. Wilkinson—a son.

Marriages

BROWNING—HANCESS.—On October 26th, 1935, at the British Embassy Church, Paris, Dr. S. Barratt Browning, Wellington House, Handsworth Wood, Birmingham, to Mademoiselle Anne Hancess, only daughter of Monsieur and Madame A. Hancess, 7, Rue de Langeac, Paris.

HOLMS—SPOOR.—On July 7th, 1935, in London, Selwyn Holms, L.D.S., to Lucette, youngest daughter of M. and Mme. Charles Spoor, of Limoges, France.

Death

LEWIS.—On October 19th, 1935, in Bright Ward, Arthur Cedric Lewis, M.R.C.S., L.R.C.P., of Roche House, Rochford, Essex.

EDS. { P. W. C. / M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

PUBLISHED FORTNIGHTLY.

Volume XLIX — *23rd November* 1935 — *Number* 1235

PASSIM

NUFFIELD HOUSE is to be opened by the Prince of Wales on Tuesday, December 10th. The opening ceremony will take place in the Out-Patient Hall. Accommodation in the Hall is limited, and invitations will, therefore, have to be restricted to some four or five hundred. A special number of the *Gazette* will appear on December 21st, with photographs and reports of the Prince of Wales's speech and the proceedings.

WE much regret to hear that Sir Francis Shipway is retiring from his position as Senior Anæsthetist on December 9th. Sir Francis graduated M.D. at Cambridge in 1907 and came to us in 1909 *via* St. Thomas's and Vienna. He has been responsible for many notable advances in the field of anæsthetics, especially the famous Shipway apparatus and the introduction into this country of avertin, and has for many years occupied a pre-eminent position as an anæsthetist. We hope to publish a valedictory notice before Sir Francis finally retires.

We welcome as his successor Mr. E. H. Rink, B.M., B.Ch.(Oxon.), and holder of the diploma of anæsthetics. Mr. Rink entered the Hospital in 1927, and, prior to specialising in anæsthesia, was Assistant House Surgeon to Mr. Ogilvie, House Physician to Dr. Ryle and Dr. Conybeare, and House Surgeon to Mr. Trethowan and Mr. Thompson. He has subsequently, since 1932, been assistant anæsthetist, demonstrator of anæsthetics, and non-resident anæsthetist.

WE very much regret to announce the death of Mr. H. C. Malleson, Senior Dental Surgeon to the Hospital, for whom a Memorial Service was held in the Chapel on Monday, November 18th. We publish an obituary elsewhere.

ON Friday, November 15th, the Biennial Dinner was held at the Connaught Rooms. Mr. A. W. Ormond was in the chair, and the attendance numbered 324 Guy's men. The tables were arranged, as usual, by years, which ranged from 1873 to the present day. In the later stages of the evening, as we looked round the room and moved upwards from the Residents' to more senior tables, we marked the many evident familial characteristics, and had ample opportunity of testing the truth or otherwise of the famous tag :—

" Damnosa quid non imminuit dies ?
Aetas parentum peior avis tulit
Nos nequiores, mox daturos
Progeniem vitiosiorem."*

Two years is a long time to wait for another such excellent evening.

During the Friday and Saturday, demonstrations and lectures by Dr. Hurst, Dr. Cameron, Dr. Symonds, Mr. Cook and Dr. Bishop, Mr. Lambrinudi and Mr. Doherty, were arranged for those Guy's men who had come up to town for the Dinner.

WE congratulate on their re-election to Parliament the following Guy's men : Sir Francis Fremantle, Dr. A. Salter, and Sir Ernest Graham-Little.

* For the benefit of those who tell us that the tone of the *Gazette* wants raising.

WE congratulate R. C. S. Dick on his selection to play for Scotland against the All Blacks at Murrayfield on Saturday, November 23rd.

We are very much cheered at the Rugger XV's well-deserved success against Rosslyn Park on Saturday, November 16th. Although without the services of Dick, they won 6—5, and our forwards maintained control of the game from start to finish. With the return of Dick and the possible advent of new talent the prospects for the Cup this season have become very much improved. An account of the match appears elsewhere.

IT came to us as a shock that the parking of cars in Great Maze Pond was to be prohibited by the Police. This was rapidly followed by a further blow when this rule was extended to parking in all adjacent streets. The possibility of this has been foreseen for some time, and much work has been done both by the local police and the Medical School Office to avoid it. For many years past complaints have been made by the proprietors of neighbouring warehouses that their lorries have been unable to gain access for the delivery of goods. There has also been trouble over the parking of cars outside the Ship and Shovel, where there is a hydrant which seems to be a constant objective of certain members of the local sanitary corps. They have several times been unable to gain access to it owing to the superimposition of large and locked motor cars. Since it was found that on many occasions the offending cars did not belong to Guy's men, those members of the Hospital who were accustomed to park in the Pond were asked to give the numbers of their cars to the Medical School Office. Thirty-six numbers were duly given in, though this can hardly cover the total number of students who use these streets as a parking place. In spite, however, of the control that was thereby gained over the parking of cars, the complaints have become gradually more pressing, and we understand that the present rule has been enforced at the instigation of Scotland Yard. Although a few of those who are accustomed to motor to the Hospital have been fortunate enough to be able to come to some arrangement with the owners of neighbouring yards, for the rest there seems to be no solution to this difficulty, nor can we hope for any change unless representations on behalf of the students are made to the police by the highest Hospital authorities.

In the meantime the congestion in the Front Quadrangle continues. We remarked last week that a toll of threepence was to be levied on members of the Junior Staff who park their cars there. The object of this little charge was, we understand, to discourage the leaving of cars, and so to reduce the congestion, though how it could be achieved by this threepenny ante it is difficult to see.

We counted the cars at half-past three one afternoon, which was not a visiting day. There were fifty-seven, including two lorries which seemed to be delivering greengrocery and china ware. We also read the numbers of the senior staff who were in attendance; these amounted to nineteen, and this makes what should be an adequate allowance for those who did not appear on the boards as having arrived. Half-past three is some time before the chauffeurs usually arrive to transport the Staff from the Hospital after their afternoon sessions, and it might be expected that traffic in the Quadrangle would then be at its least. It will be noted that almost exactly two-thirds of the cars belonged to members other than the visiting staff, and from this it may be argued that this somewhat ungracious, if small, imposition levied on the Junior Staff is serving no purpose, as far as the relief of congestion is concerned.

At 11.30 the next morning there were forty-four cars, of which not more than sixteen belonged to the visiting staff. In each case only a small fraction of the remainder belonged to the Junior Staff. One would have thought that the Junior Staff had more right to the use of this space than visitors, and we feel that it is the visitors who should be charged. If this does not succeed in reducing the congestion, provision might be made for the Junior Staff by allowing them the use of the unoccupied quadrangle between the Nurses' Home and the Laundry. We feel that the inevitable objection that the noise will disturb the many nurses who sleep by day is not a real one.

SOME attractive little drawings, notably one of "Bell's Pony, Daisy" (whoever she may be), together with some calculations and a somewhat inaccurate picture of a Union Jack, have lately appeared on the walls of the changing room in the Squash Court. These remind one of those homely phrases such as "Bill Turner is a fool," which we sometimes see scrawled by State-educated hands on walls about the Borough. They are shortly to be removed, and those who have been martyrs to the wind which whistles about their feet when changing for squash will be glad to hear that the changing room, hitherto a cross between a stable and a slaughter house, is

to be redecorated. The ravages of the death-watch beetle in the roof are to be arrested. The windows are to be glazed. The walls are to be painted. A radiator is to be installed and, in addition to the shower, a basin in which it will be possible to wash. A carpet is being laid down and some chairs are to be provided. It is very much to be hoped that these will not have to be padlocked to the floor, that the new glass may be left intact, and that too much use will not be made of the new surface provided for drawing.

THERE are now only very few copies left of Dr. Campbell's monograph on the Medical Knowledge of Dr. Watson and Mr. Sherlock Holmes. All who are anxious for a copy of this work, which is invaluable to anyone who is a student of forensic medicine and of great interest to anyone who isn't, should apply to the Appeal Office. The monograph is modestly priced at one shilling; the proceeds of the sale are generously being devoted to the funds of the Hospital.

NUFFIELD House will be open to inspection by members of the medical profession on December 11th, 12th and 13th between 10.30 a.m. and 5 p.m.

THE Dental Dance will take place on December 4th, 1935.

Obituary

HERBERT CECIL MALLESON, L.R.C.P., M.R.C.S., L.D.S.

THE Hospital has suffered a great loss in the death of Mr. H. C. Malleson. He entered the Hospital in 1901, taking his L.D.S. in 1903 and his Conjoint in 1906. He then became Obstetric Resident, and was afterwards awarded the Dental Travelling Scholarship and studied in the University of Pennsylvania. On his return he joined the staff of the Dental School, on which he remained until his death at the early age of 54. At the time of his death, Mr. Malleson was Senior Dental Surgeon to the Hospital, and had just been elected to the Board of Examiners in Dental Surgery of the Royal College of Surgeons of England. In 1927 he was awarded the John Tomes Prize of the Royal College of Surgeons for his researches into the structure of enamel. He was also part author of a text-book on Practical Dental Histology and Bacteriology. A man of extremely genial nature, a loyal friend and a good golfer, he was greatly beloved by all who knew him; their very deep sympathy goes out to his widow and family.

THOMAS DUTTON, M.D. Durh., M.R.C.P. Edin.

(Reprinted from the "Lancet")

DR. DUTTON, who died in London on Monday at the age of 81 years, had lived a varied and strenuous life. Born in Pimlico and educated at Bayswater Grammar School and Guy's Hospital, he went on to Scottish universities, qualifying in Edinburgh in 1878 and taking the Durham M.D. four years later. He was then for several years in the mercantile marine, acting as surgeon on the *Elysia*, *Tongariro* and *Argonaut*, and later Admiralty surgeon and agent for the Chichester division. On his return to London he practised in Holland Park, being active in medical politics, and becoming a consulting physician with special interest in diseases of the digestive organs and in the eradication and care of tuberculosis. In his early days he had taken up yachting and swimming—he was an amateur champion—and his writings covered a large range of subjects on the practice of healthy living. He published a popular book on "Voyaging for Health," and a treatise on "Indigestion Clearly Explained," which ran into several editions, and a handbook on "The Food and Rearing of Children," which also was reprinted several times. Papers on diet, alcohol, hygiene and tuberculosis appeared in our own columns. He remained in practice until his death, being honorary physician to a welfare clinic in Uxbridge Road. He was also vice-chairman of the Pure Food Society.

The Influence of a Diseased Gall Bladder

A Clinical Lecture delivered at Guy's Hospital, October, 1935, by Dr. A. H. Douthwaite, F.R.C.P.

GENTLEMEN,—An attack of gall-stone colic leaves an indelible impression on the mind of the observer and on the sensorium of the victim. The subtle and insidious changes which may lead after years to this culminating storm are, however, often disregarded; yet they are worthy of close study if we are to fulfil our chief aim—the prevention of suffering. For convenience of description I shall, however, first deal with the more dramatic manifestations of gall-bladder disease before considering the effects of mild infections of this organ.

For the purpose of this lecture I have analysed the records of patients seen in consulting practice during the last three years. Of these, fifty-three suffered from gall-stones and ninety-six from chronic cholecystitis.

GALL-STONES—ÆTIOLOGY

Of the ætiological factors favouring gall-stone formation those of importance are bile stasis, sex, possibly pregnancy, age and infection.

Stagnation of bile naturally results from sedentary habits, which again predispose to *obesity*. The weakening and diminution of frequency of contractions of the abdominal muscles entailed by both factors lead to lack of efficient expulsion of bile from the gall-bladder. In some experiments which I have carried out on patients undergoing cholecystography, I have shown that vigorous retraction and relaxation of the abdominal walls, especially with the patient in the knee-elbow position, will cause a great reduction of the gall-bladder shadow, though rarely to the degree induced by a fatty meal. In my series, *obesity* was a noteworthy feature in only sixteen patients. Its relationship to gall-stones has been over-stressed and is only an indirect one, as I have just indicated. Chronic cardiac disease, visceroptosis and pregnancy all interfere with emptying of the gall-bladder; the first and last by the associated restriction of diaphragmatic movement, whilst visceroptosis tends to produce kinking of the cystic duct. The influence of *sex* in gall-stone formation is well known. In this series 45 were females and 8 males. Of the women, 38 were married and had borne children; 7 were single. No doubt the less active habits of the female are largely responsible for the sex incidence; in particular it should be noted that with few exceptions women wear some form of abdominal corset, thus depriving them of any incentive to use their abdominal muscles. The approximation of the sex incidence in Japan is difficult to explain. No doubt one factor is the extreme constipation which afflicts the working classes, both male and female.

Too much stress must not be laid on the effect of *pregnancy*. Although admittedly the cholesterol content of the blood rises in this condition, the increase is not nearly so great, or so persistent, as in some cases of nephritis, or of malignant hypertension, in which gall-stones do not occur in an unduly high proportion. Furthermore, the ratio of married women to spinsters is probably closely approximate to that of the married to the unmarried gall-stone sufferer.

Age. Gall-stone incidence increases as age advances. Of my cases, the youngest was 18, the oldest 80 years. Forty-eight of the patients were over the age of 40. In the young it is common to find a single cholesterin stone without signs of infection, but in the youngest case there were twenty-four faceted stones with evidence of cholecystitis.

Infection is almost always concerned in the production of gall-stones, but in the absence of stasis calculi are unlikely to be deposited. In former years a previous infection with typhoid bacilli was found to be a common forerunner, but this is now rare (3 cases), and Bacillus coli and streptococcal infections predominate. There is probably an association between the former and *constipation*, of which there was a history in 38 members of this series. It may act by inducing intestinal catarrh and an upward spread of organisms to the gall-bladder, or more probably their passage into the blood stream. Again, the habitual use of purgatives by irritation of the mucosa will bring about the same result. The not uncommon occurrence of *gastritis* with gall-stones (18 cases) is probably the result rather than the cause of an upper alimentary tract infection which produces both conditions; it occurred in only five of my patients with cholecystitis, which is to be regarded as the usual forerunner of calculus formation.

The outstanding conclusion to be drawn from this brief survey of the ætiology of cholelithiasis is that if the abdominal viscera are kept in that state of moderate turbulence natural to the healthy individual, the incidence of gall-stones would show a striking diminution. Of exercises designed to secure this end I shall speak later.

SYMPTOMS

The average length of time which elapsed between the first symptom of abdominal discomfort and the occurrence of true pain was three years; from the first symptom to the first consultation, 5½ years. The shortest history was two days; the longest, 45 years. The earlier symptoms are presumably to be ascribed to a developing cholecystitis.

Pain was the outstanding symptom in 45 cases. It usually starts high and centrally in the epigastrium (30) and, after a variable time, spreads to the right hypochondrium (24). This is in every way comparable with the pain of acute appendicitis; the visceral pain is central, that due to extension of inflammation to the parietal peritoneum is strictly localised. Lower sternal pain occurred in seven cases. In two of these it then spread around both sides of the chest; in the remainder it settled in the right hypochondrium. The pain, wherever situated, is usually described as of agonising, screwing, boring, or burning nature; occasionally as bursting or stabbing in type. It has an appreciable though rapid *crescendo* character, and once it reaches its maximum it seldom fluctuates, as does a true colic. It passes off as a rule more slowly than it comes on, and residual soreness over the gall-bladder, or at the points of reference, may persist for many hours, or even days. Two of the patients with substernal pain described it as crushing in type. This is rare, but important because such a character is usually confined to cardiac crises, *e.g.*, angina pectoris and coronary thrombosis.

Radiation into the back (9) is usually slightly to the right of the spine over an area from D.8 to D.11; it may be strictly inter-scapular. Pain starting in, and being confined to, the right hypochondrium occurred in only 3 cases. Radiation into the right iliac fossa (2), right groin (1), and right shoulder tip (4) are rare paths of distribution. Of the last one only was spontaneous, the other three suffered shoulder-tip pain on deep inspiration. At operation, in addition to gall-stones, the gall bladder was found to be involved in adhesions which extended to the diaphragmatic surface of the liver. It was no doubt irritation of the terminations of the phrenic nerve in the diaphragm which produced in these cases a symptom on which much too much stress has been laid in the past.

I have seen one example of purely left-sided pain as evidence of gall-stone colic. This occurred on three occasions in a woman of thirty years of age. It was felt in the region of the fundus of the stomach; there were no associated signs. The fourth attack started in the same way, but the pain then spread across the epigastrium into the right hypochondrium, where tenderness and muscular rigidity were apparent. The gall bladder was full of small stones. Whether left-sided pain is merely a peculiar reference, or whether it is to be attributed to pyloric spasm and rise of intragastric tension, is a moot point. Relief from pain may occur suddenly as the result of vomiting.

SYMPTOMS AND SIGNS ASSOCIATED WITH PAIN

Flatulence and vomiting are the only commonly associated symptoms which accompany the agony of gall-stone colic. Flatulence, which is an outstanding feature (30) of gall-bladder disease even in the quiescent periods, is due to the swallowing of air. *Vomiting* in attacks is less common, occurring in only fifteen of this series. Owing to the inability of the sufferer to keep still in an attack, examination is always a matter of difficulty. There is usually profuse sweating, slight fever, rigidity of the upper abdominal muscles particularly in the right quadrant, constant restlessness, groaning, and a pulse rate of about 90 to 100 p.m. It may be possible to elicit areas of hyperæsthesia over the gall bladder and to the right of the spine at the level of D.8 to D.10; acute tenderness to pressure over the gall bladder is seldom missing, but there may be an associated tender enlargement of the liver; a point of some practical importance in relation to the differential diagnosis from coronary thrombosis. A palpable gall-bladder was detected in four cases, albuminuria in seven, blood, albumin and casts in one. Signs of diminished air entry, impaired resonance, and restricted movement of the right lung base occurred in 20 cases, and are referable to inhibition of diaphragmatic movement. Tetany was seen in one attack; rigors in one (gall-stone and empyema of gall gladder), and diarrhœa in seven.

Jaundice is seldom seen until some hours after an attack. Even then it is not common (11). On the other hand, a history of pale stools or dark urine passed the next day was obtained from 33 cases, and indicates that occult jaundice is the rule and could be detected by the Van den Bergh test. The jaundice is usually explained as due to a temporary blockage of the common duct by a passing gall-stone, but I am convinced from operative findings that it is often due to inflammatory swelling of the duct mucosa only. In one instance of recurrent gall-bladder colic with slight jaundice, *yellow vision* persisted for five days after each attack. A stone was found in the neck of the gall bladder; none in the common duct.

INTER-PAROXYSMAL INTERVALS

Up to the present we have considered only the attacks of gall-stone colic, but these may be separated by intervals of many months or even years. Nevertheless, during these periods of comparative comfort some symptoms invariably arise from time to time. Many of them are those of cholecystitis; for instance, attacks of flatulence after food are extremely common. The patient often volunteers the information that she has to undo her waistband after quite a small meal because it becomes unbearably tight.

Certain foods are avoided by the gall-stone sufferer. The idea that eggs and fats are the chief of these is wrong. Thus 42 patients stated that salads, raw fruit and spiced foods were the most liable to cause discomfort. The reaction to the homely cucumber is almost diagnostic. Asked whether this vegetable can be eaten with impunity, their answer is that they cannot touch it; it is poison to them. Thirty-one patients, many, of course, included in the above, could not tolerate fatty food, in particular rich stews, pastry and sweets. Only 12 were unable to eat eggs. Evidently the stomach is unusually sensitive to mechanical irritation in these patients, otherwise it is difficult to explain the salad group. Olive oil is strangely enough tolerated very well, and in fact forms the basis of certain medical treatment.

Dull epigastric pain and, indeed, gall-stone colic are particularly prone to occur at night. This was the principal time in 28 cases. Lying on the left side (12) may bring on pain which is relieved by turning to the right. This must be a mechanical effect, but it is less easy to understand the onset of pain when lying on the right side as well as the left (7), comfort being obtainable from lying on the back. An apparent relationship between taking food (of any kind) and distension was present in 31 patients, the time interval being up to one hour. Pain within two hours of food occurred in fourteen.

ASSOCIATED DISEASES

Hyperpiesia was present in 11 cases, all over the age of 55. Systolic pressures of 170 or over, and diastolic pressures of 100 or over, were taken as criteria for the diagnosis. Apart from this group, eight patients evidenced myocardial degeneration, as shown by the usual symptoms of early congestive failure; five persons suffered from anginal attacks which were quite distinct from those of gall-stone colic; two had had coronary occlusion. In this connection you should note that an association between chronic gall-bladder infection and cardiac disease seems to be very common. Angina pectoris is no contra-indication for the removal of a diseased gall-bladder; in fact, the reverse, for the former is often favourably influenced by this step.

Bacillus coli infection of the urinary tract was present in 14 cases; in eight it cleared up after cholecystectomy without further treatment. This observation is of interest and supports the view of McOustra and others that in a great number of coliform infections of the urine, investigation and treatment should be directed towards the alimentary tract rather than the kidneys.

Diabetes mellitus was present in three patients; they all improved after cholecystectomy, one making a complete recovery, the other two being able to preserve health with greatly reduced doses of insulin. The association of chronic pancreatitis with gall-bladder disease is well known, and no doubt accounts for these cases.

Chronic appendicitis was found in five cases and duodenal ulcer in three.

DIFFERENTIAL DIAGNOSIS

Renal Colic.—As the pain of gall-stones may be much worse in, or even confined to, the back than in the epigastrium, a wrongful diagnosis of calculus in the right kidney is often made. The most important point is the difference in history in the interparoxysmal periods. Next to this comes the radiation of the pain which with gall-stones is seldom (*q.v.*) downwards to the hypogastrium. Loin tenderness, blood, pus or albumin in the urine favour renal calculus, but neither one nor all is diagnostic (see symptoms and signs).

Cholecystitis.—Very severe pain and jaundice are uncommon in this condition; in many instances the differential diagnosis is quite impossible.

Appendicitis.—It is seldom difficult to distinguish between acute appendicitis and gall-stone colic. The pain in both may be epigastric, but with gall-stones is usually much more severe, of wider radiation, and associated with high abdominal rigidity. Tenderness in the right iliac fossa is wanting. I have seen one case of recurrent appendicular colic which by its symptoms completely misled me into diagnosing gall-stones. The pain was epigastric, the tenderness was in the right hypochondrium, the temperature was not raised, yet an acutely inflamed appendix was the sole cause of the trouble. In three previous attacks, as the pain was on the wane, it had shifted into the right iliac fossa. Clearly I was wrong in considering this feature too casually. Chronic appendicitis and chronic cholecystitis with gall-stones offer quite the greatest difficulty in differential diagnosis. In addition to the 53 cases of gall-stones to which I have referred I have notes

of seven others in whom I diagnosed cholelithiasis and found myself to be wrong. Six of these patients suffered in fact from chronic appendicitis. Thoroughly expert X-ray examination will usually settle the point.

Angina Pectoris and Coronary Thrombosis.—These conditions offer one of the most difficult problems of differential diagnosis in relation to gall-stone colic. From time to time one meets patients who have been subjected to great restriction of physical activity over many years on the assumption that they suffer from cardiac weakness, yet on investigation the cause of the symptoms is found to lie in the gall bladder, whose removal effects complete cure. As I have already indicated, the site of pain, and even on occasions the type of pain, due to gall-stones may be exactly like that of coronary thrombosis. Radiation to the arms is in favour of cardiac disease; to the back, of gall-bladder disturbance. In angina pectoris the pain is usually short-lived. In coronary thrombosis the pulse is generally more rapid and feebler than in gall-stone colic. The history of previous attacks of flatulent dyspepsia or, on the other hand, of progressive dyspnœa, may be decisive in indicating the diagnosis. Localised gall-bladder tenderness and rigidity of the upper right rectus strongly favour subdiaphragmatic disease, but more diffuse upper abdominal tenderness may be due to either cause on account of congestion of the liver. In short, even with the utmost care the diagnosis is not always possible, particularly where the patient has gall-stones in addition to cardiac disease. The administration of morphine is advisable in either case, and with time gained the various distinctive features of one or other malady will become apparent.

Although there are several other conditions likely to give rise to confusion they are sufficiently rarely presented in this form to justify my passing them over.

I should take this opportunity of pointing out that, although the diagnosis of a stone impacted in the common duct is not uncommonly made in the face of pain and persistent jaundice, yet you will find that at operation this condition seldom exists. More often than not, the clinical picture is produced by inflammatory swelling of the duct mucosa or by the enlargement of a gland situated at the junction of the cystic and common duct.

Catarrhal Jaundice may simulate the supposed clinical picture of an impacted stone very closely. There is often early pain, but, though the jaundice may persist for four or five weeks, tenderness of the gall bladder, if present to start with, steadily diminishes, recurrent attacks of pain are rare, and the peculiar canary yellow colour of the skin persists throughout. With obstruction due to a gall-stone, there is usually recurrent pain with fluctuations of the degree of jaundice. Furthermore, the colour tends to take on a more greenish hue.

X-RAY DIAGNOSIS OF GALL-STONES

Forty-five of this series were subjected to X-ray examination prior to operation. By means of cholecystography, 27 were shown to have gall-stones. In 13, no dye entered the gall-bladder, or so little entered as to give a feeble shadow. One case was reported as normal, whilst in four patients a shadow of the gall-bladder was plainly visible without administration of the dye. In short, in nearly 98 per cent. of cases radiography established the diagnosis. Note that if no shadow is shown after oral administration of the dye, no conclusions may be drawn from this until the examination has been repeated after intravenous injection. This precaution is necessitated by the variability of the absorption of the drug by different patients.

TREATMENT

There is only one treatment of gall-stone colic, and that is the administration of full doses of morphine, preferably in combination with atropine.

There is only one effective treatment of gall-stones, namely, cholecystectomy. Great age *per se* is no bar to operation. If this be contra-indicated by severe disease in the cardio-vascular system or elsewhere, then some palliation may be achieved by treatment on the lines for cholecystitis. Improvement is then due to encouraging bile drainage and consequent reduction of infection.

CHRONIC CHOLECYSTITIS

Ætiology.—Many of the ætiological influences of cholecystitis are those of gall-stones, for the latter usually arise as a direct result of chronic inflammation of the gall bladder. There is, however, one noteworthy difference, namely, that of sex-incidence. Of the 96 cases of chronic cholecystitis reviewed, 38 were males and 58 were females. The higher percentage of males, as compared with the gall-stone patients, is largely referable to the fact that chronic cholecystitis appears often to arise as a secondary feature of intermittent bacteræmia such as may follow oral or appendicular sepsis. The blood borne infection may first produce an acute cholecystitis which becomes chronic, or it may be of insidious onset. In those instances the infective organism is usually the streptococcus.

Chronic cholecystitis may be present for many years without gall-stone formation, and as in the male the common causes of bile stasis are usually absent, it explains why gall-stones affect this sex comparatively rarely. As regards age incidence, cholecystitis is found earlier in life, and in this series 30 per cent. of the patients were under 40 years of age.

SYMPTOMS

Once again we find that the all-important symptom is *flatulent distension*, particularly after meals. The same foods which disturb the sufferer from gall-stones are provocatives here. In 82 patients flatulence formed the chief complaint. Diffuse *heaviness in the upper abdomen* occurred in 37 cases whilst *dirty tongue*, *lassitude*, *vomiting and headaches* in bouts were present in 17. Severe *pain* similar to that produced by gall-stones occurred in six patients; black *spots in front of the eyes*, accompanied by sallowness or yellowness of the face, in 26. *Palpitation and precordial distress* featured in 16; lifelong *constipation* in no less than 63. Chronic cholecystitis is a not uncommon cause of *cryptic fever*. Occasional attacks of low pyrexia lasting for a few days and associated with extreme fatigue were present in 25 patients; in some of these the first was the only symptom. A dull *ache in the lower thoracic spine* (10) may divert the attention from the true area of disease whilst symptoms more suggestive of *psychoneurosis* rather than of an abdominal malady must be included in the vast symptomatology of the affliction. I have notes of slight but definite icterus in five patients, but this symptom, as also that of severe pain, must not be taken a conclusive evidence of the presence of gall-stones.

ASSOCIATED DISEASES

A large number of diseases associated with, though not necessarily causally related to, cholecystitis occurred in this series. The most important were Bacillus coli infection of the urinary tract, 24; muscular rheumatism, 17; rheumatoid arthritis, 10; diabetes, 7; chronic appendicitis, 23; migraine, 11; angina pectoris, 5; and chronic gastritis, 9. One case of rheumatoid arthritis suffered acutely from joint swellings until vomiting or diarrhœa occurred. On these occasions the arthritic signs vanished within a few hours, only to recur in a few days. The course of events suggested that temporary emptying of the gall-bladder was responsible for a great reduction of circulating toxins.

DIAGNOSIS

From the above summary of symptoms it is clear that the diagnosis of cholecystitis may be one of the greatest difficulty. The most helpful points are flatulent dyspepsia, localised tenderness on pressure over the gall bladder, especially in full inspiration, furred tongue, bouts of fever and loss of appetite. For confirmation a cholecystogram should be obtained, but positive evidence is far less common here than in the case of gall-stones. Non-filling of the gall-bladder is inconclusive unless the dye be given intravenously. 4.5 grams of sodium tetraiodophenolphthalein in *fresh warm* solution in 40 c.c. of water should be given intravenously and slowly. Administration should be at 9 p.m. and X-rays taken the next day at 9 a.m., 11 a.m. (the patient having fasted), and then again after a fatty meal. In this way the power of concentration and of contraction of the gall bladder, in addition to its form, can be observed accurately. In cholecystitis the shadow is usually faint and has not increased in density at the second examination. Demonstrable tenderness of the organ whilst viewed by screening is a still more important sign and present in cholecystitis even if function appears to be normal. In such cases there is ample evidence of chronic inflammation in the organ when removed.

The commonest mistake in diagnosis is to accuse the gall bladder of symptoms which are in reality due to the appendix. Chronic infection of this organ may produce epigastric discomfort, flatulence, fever, lassitude, furred tongue and occasional vomiting. It is quite common to find tenderness in the right hypochondrium except in an attack when it will be noticed at McBurney's point. It is, therefore, essential to X-ray the appendix in all patients suspected of cholecystitis. Non-filling of the appendix over three days, partial filling with demonstrable tenderness, and, above all, fixity of the organ indicate disease.

TREATMENT

When symptoms are relatively short-lived and radiological evidence of cholecystitis, except tenderness on visually controlled palpation, are absent, medical treatment will often effect cure. When signs are more evident, medical treatment will give temporary improvement, but in the long run surgery is usually indicated.

The work of Hurst and Knott has shown that hexamine may liberate formaldehyde in infected bile and render it sterile. This is the basis of medical treatment in which large doses of alkali in the form of pot. citrate and sodium bicarbonate are given to render and maintain the urine in a state of alkalinity. So long as this reaction per-

sists, it is safe to give hexamine in doses up to 60 or even 100 grains daily without fear of damage to the urinary bladder.

Another form of treatment which is often successful consists of the administration of olive oil in half-ounce doses. The oil encourages expulsion of bile and thus aids drainage. The same effect is produced by giving half-drachm doses of magnesium sulphate in water on waking. The patient should lie on the right side for half an hour after administration. Theoretically the solution should be concentrated, but if this is extreme pyloric closure is induced and only a little fluid enters the duodenum until the solution has been diluted by gastric juice and saliva.

Certain preparations of bile acids, notably decholin (2 tablets t.d.s.), may be found to be helpful, especially when there is reason to suspect an associated cholangitis. They are true cholagogues and presumably help to flush out the biliary system.

Whatever the type of medical treatment employed it should always be combined with a suitable diet and the regular practice of abdominal exercises.

The following limitations of diet should be imposed :—

The diet should be free from alcohol, iced drinks and ices, spiced food, fried food, very hot food or drink, salted foods, mustard, sauces, shellfish, smoked meat or fish, pastry, new bread, food containing pips, skins, nuts, strong cheese, coffee and strong tea and salads (except in strict moderation). Food must be thoroughly chewed.

The best abdominal exercises are fully described in Hornibrook's "Culture of the Abdomen," which I strongly recommend to your consideration.

One last point: if cholecystectomy has been performed for gall-stones or for cholecystitis, remember to warn your patient that he will be unable to eat without dietetic restriction for six months to a year. It seems to demand this time, especially in long-standing cases, for a full resumption of the normal activities of the upper digestive tract.

Note.—Figures in brackets relate to number of cases.

General Practice

A Lecture delivered at Guy's Hospital by P. Seymour Price, Esq., M.R.C.S., L.R.C.P.

GENTLEMEN,—The excuse I plead for coming to talk to you to-day is the importance of the subject—General Practice. You are not all, I take it (indeed I might almost say I hope), bound for Harley Street or its environs, but, even if you are, there would be considerable need for you to understand as much as possible of the conditions that govern the life of a G.P.

For example, you would thus appreciate what it means in a very busy day to be kept waiting by a consultant for half an hour, or to spend an hour and a half at a consultation, where you imagined (possibly quite correctly) that half an hour was ample.

We are fortunate in having on the staff here a physician who has had experience as a G.P., and I would advise you to get and read carefully Dr. Douthwaite's book on General Practice; it is full of good things and sound advice. The readable and useful books on General Practice can be counted on the fingers of one hand.

The first point I wish to make is the paramount importance of making it a rule to control the situation in the case of every patient. You must be explicit and pay due attention to treatment and diet, so that there is no room for the patient to imagine that a little alcohol means a bottle of whiskey per diem, or that light diet includes roast pork and suet dumplings. On the question of diet, remember that boiled sole is very insipid; try it. Dr. Lewis Smith once told me that a patient refused to eat boiled sole, and asked him if he had ever tried it. On his admitting that he had not, the patient told him that it was just as uninteresting as kissing one's own sister!

There is no room, or at least there should be none, for the tame doctor; though I have come across patients who would like to possess one, and who adore to instruct the doctor in his duties to the world in general and to themselves in particular.

Remember, too, that the doctor should only have one class of patient—the sick person. It matters not if the sick person is princess or pauper, a duchess or a domestic; indeed the latter has more claim to our sympathy and skill, for she has no option, whereas the former can dispense with our services whenever she pleases.

The late Dr. Brookhouse (father of H. O. Brookhouse, whose Christmas plays for the Residents here you should certainly read, if you have not already done so—they are in the Library)

gave me a piece of advice that I have always tried to follow.

It was this: Never leave the house without feeling that you have earned the fee you propose to charge. You may not earn it by your treatment or advice, but see that you satisfy yourself that you have earned it in some way.

As regards fees, I have found it wise never to agree to accept very small fees. It only leads to difficulties with other patients, and for some reason these people, who have naturally least claim on one's time and skill, always expect most. My rule for many years has been—either to agree to a reasonable fee, and, if this cannot be paid, then to make no charge at all.

Naturally one sometimes gets let down badly. I had an old gentleman of over eighty who was very seriously ill with senile dementia and an enlarged prostate. Male nurses were required, and also the advice of the late Sir Maurice Craig. The wife assured me that he possessed only an annuity, which ceased at his death. I therefore arranged for all fees to be quartered.

As soon as he was dead I was asked to send in a note of my fees as soon as possible, and they would try to pay it. A few weeks later his will was published—he left over ninety thousand pounds.

Many American patients love to do a deal, and are tickled to death if one charges them pounds instead of guineas, money being apparently the only subject and object of interest to them. Please remember to send in your account at regular short intervals. People will readily settle their bill while the memory of their illness is fresh in their minds, but delay will cause possible queries as to the number of visits. Remember that the patient has the right to demand full details, should he so desire. A barrister patient of mine always demands this, so that not only the number but the dates of the visits have to be recorded on the note of fees—an awful bother, but luckily an isolated case. Whilst on legal aspects of practice, remember that the law does not require you to use the latest, or indeed any special form of treatment. You are expected to use reasonable skill, and an action can only succeed against you for negligence and want of due care and skill.

Never omit to allow sufficient time for a complete examination of every patient. You will find, as the practice grows, an increasing tendency to allow questioning to take the place of physical examination, with the result that you may miss a diagnosis, and get your eye wiped. Indeed, as you know, appropriate treatment must depend on accurate diagnosis. The peril of too large a practice is slipshod work. Lightning diagnoses do not always come off. This applies to the fashionable consultant as much if not more than to the busy G.P.

Do not envy the man who sees thirty or more patients a day. Rather pity him, for, sooner or later, missed diagnoses will be talked about, and remember that many a practice has been ruined by the ladies over their tea-cups. It is quite possible to have too large a practice.

Next let me plead for complete frankness; don't bluff unless you are compelled to, and do not be afraid to say that you don't know what is wrong with a patient, and that you would like a second opinion. You will at least gain respect for honesty from your patient, who realises, with you, that no one is omniscient.

I knew a consultant years ago who was so proud of his omniscience that he would pledge his professional reputation that there was not a shred of evidence of cancer, when a surgeon soon after would find inoperable carcinoma.

Always be patient, and listen carefully to the loquacity of your female patients. Amidst the logorrhœa of irrelevant detail may drop out the grain of truth, which gives the key to the whole situation. Nothing disappoints a lady so much as the fact that her doctor is not interested in the pain which, starting in her little finger, eventually and by tortuous routes arrives at her big toe; and please don't look at your watch too often during this terrible waste of time, for remember that to her it is a matter of the greatest import and very real.

Supposing during your examination some alarming symptom is found, be sure not to show evidence of it by voice or look. Cultivate a "poker face" and remember that "a still tongue makes a wise head."

What should a patient be told in grave cases? Certainly not the whole truth, but be sure to tell some responsible member of the family. This should be an invariable rule, and if you fail to inform anyone you may even risk an action for negligence, added to which is the fact that, unless some member of the family be informed, necessary steps and arrangements, power of attorney, and the like may be omitted.

Suppose the patient to be *in extremis*—what is our duty? I am aware that I am on debated ground here, but I never omit to inform a patient if he is conscious and if, as generally happens, he inquires. One has to remember man's tripartite nature, and it may well be that the physician of the soul has his duty to perform. Relatives are apt to fear that the visit of the parson is a prelude to death. A patient of mine was dying of carcinoma and a Roman Catholic padre was kept waiting

two whole nights, because the relatives thought that his advent would hasten her inevitable demise. At last in sheer despair I told the patient that he was waiting, to which she replied : " I, too, have been waiting for him for a long time. You have done your bit, and it is time he did his."

To turn from patient to doctor : First you must keep absolutely fit ; it sounds so easy, but proves so difficult. Get regular exercise, even if it means battering the pavement. Don't use the car to go next door. Don't go to bed with your patients. Lord Moynihan has told me how many a sleepless night this has caused him. The only way I know to prevent it is to sum up each day over a final pipe, run over your cases, hunt up any unusual features or symptoms, and then lock up your brain until next day, or until the night telephone calls you. Get to bed early whenever you can. If you try to burn the candle at both ends not only will your health suffer, but your work, and consequently your practice will as well.

Be willing to take your share in the life of the community, doing whatever you can to promote its interests. I know of no more boring way of wasting one's time than sitting on committees. The ideal committee, to my mind, consists of two people, one of whom is unavoidably absent. Yet you will be looked upon as the right man to give advice on many a point that arrives, and, after all, yours is a brain trained to observe, to weigh and to make decisions.

As regards partnership, this is one of the most difficult problems that faces a G.P. Partnership is like marriage, and therefore " not to be taken in hand lightly, unadvisedly, or wantonly." If you are lucky enough to find a man in whom you can feel the same trust and sympathy as you would feel for your own wife, then you could safely begin partnership with him. I have, however, seen many partnerships where there is complete lack of harmony and understanding. The constant friction that results wears the nerves of both to a frazzle. It is important to realise that no doctor has any proprietary interest in a patient, a fact that is often overlooked, especially when the sale of a practice occurs. The patient is, and always must be, free not only to choose his doctor, but to change him. Never try to retain as a patient a person who shows signs of wishing to change his medical adviser. Remember that unless such changes took place there would be no work for the younger G.P.

Medical etiquette, about which so much is talked by the laity, can, I think, be summed up in one sentence : " Do unto others as you would wish, in similar circumstances, they should do unto you."

You must expect to be consulted on many matters unconnected, or not directly connected, with practice. You will be expected, for example, to be able to advise on the vexed question of the supply of domestics, and let me here say that I attribute a great deal of the nervous exhaustion one sees in married women to-day entirely to the ceaseless difficulties of running a house under present-day conditions.

Keep abreast of the times in your work, by reading and attending medical societies, but beware of medical fashions. I sometimes think that medical fashions are as changeable as women's dresses ; sour milk, for example. Remember the old adage : " Be not the first by whom the new is tried, nor yet the last to cast the old aside."

Develop and work at any branch of our art that attracts you. Read it up and become complete master of it, and you will soon collect a group of patients suffering from the malady with which you are particularly qualified to deal. Sir James Mackenzie's fame for knowledge of heart disease was made as a busy G.P. in the North of England.

I happen to be secretary of a research fund which offers, in addition to grants, the whole capital of £25,000 to any doctor who can place bacterial endocarditis under medical control. I merely offer this as a suggestion.

Of panel practice I know little or nothing. Twenty years ago I agreed to run the practice of a Guy's friend of mine, for a month whilst he was on holiday, during which time I learned two lessons. One was to extract teeth, at which I unluckily gained a bubble reputation, long since forgotten ; and the other was the amount of time one can waste in writing on coloured forms. All of mine were on the wrong colours, so the chemist informed me, but, being obstinate, I refused to rewrite them. He nearly fainted when I unwittingly prescribed potassium iodide for a panel patient, and on my asking, as this was not on the list, what substitute could be used, he suggested Mag. Sulph. !

Get away for regular holidays, and, if possible, a day or a half-day a week.

Cultivate a hobby, something that will take your mind right off your work, and worries. You will then come back fresh to work.

Don't take alcohol during working hours. As the *Guyoscope* (unhappily defunct these many years) so tersely put it : " A doctor's reputation for sobriety is inversely as the breath of his nostrils."

After twenty-five years at it, I can truthfully say that I consider the life of the G.P. an extraordinarily happy one, full perhaps of lights and

shades, humour and sadness, joy and sorrow. How often one has to whistle that one may not weep. I only know that I would not change my work for any other vocation, and certainly not for what a patient of mine cynically called " the humbug of the Harleyans, or the wiles of the Wimpolians."

Will you allow me to wish you all the very best of luck in whatsoever form of practice you embark. You will not become millionaires, but you will be sure of bread and butter, and even jam.

Should your lot be General Practice, remember that you are the man behind the gun, a member of the only branch of medicine without which the public cannot carry on.

Let me quote one sentence of the late Sir William Osler : " Have no higher ambition than to become an all-round family doctor, whose business in life is to know disease and to know how to treat it."

Correspondence

University of London Rugby Fives Club

To the Editor of the GAZETTE

SIR,—Would you be kind enough to allow me to make use of your columns to draw your readers' attention to the fact that a University of London Rugby Fives Club has been in existence for two years. A number of matches, including those with Oxford and Cambridge, are played each season. Would any players wishing for a trial communicate with the Secretary, Mr. Anderson, King's College, Strand ?

It is proposed, if possible commencing this season, to run an inter-hospitals' championship for a cup very kindly presented by Dr. E. F. Cyriax. Each college or hospital competing will need a side of four. I should be interested to know whether Guy's would care to enter.

Yours, etc.,

W. L. NEUSTATTER,
President, U.L. Fives Club.

Dept. of Psychological Medicine,
Guy's Hospital, S.E.1.

Medical Men and Insurance

To the Editor of the GAZETTE

SIR,—Having experienced the benefit to be derived from insuring with the Medical Sickness Annuity & Life Assurance Society, Ltd., Lincoln House, 300, High Holborn, London, W.C.1, will you allow me in your journal to advise every medical practitioner and dentist to insure with that Society ?

There are many medical men and women who do not know of the advantages to be gained by insuring against accident and sickness with the Society for a permanent contract, in preference to insuring with another company under an annual contract. The Society has been founded by medical men for the benefit of their fellow medical men with a Board of Directors consisting of doctors.

I am writing as I personally have been receiving sickness benefit during the last ten years. In 1925 I suffered from infective endocarditis, pulmonary embolism and other complications, which prevented me from working. During the whole of this time, on the first day of the month, I have received a cheque.

If I had been insured with another company under an annual contract I should have been paid for a year, then the company would not have taken on any further risk and it would not have been possible to insure elsewhere.

I know of several medical men who have benefited for several years by insuring with the Society.

I recommend all men and women and dentists to insure with the Society immediately they are qualified. The younger they are the less premium required.

They will find, especially if they have no, or only small, private means, that their financial troubles will be lessened if, like myself, they contract a prolonged and incurable disease.

If the sickness is of short duration the sickness benefit will help to pay the locum's fees.

Yours, etc.,
" One Who Has Been A Beneficiary."

Municipal Surgery

The copy of the bed report by a patient when an inmate of an L.C.C. hospital.

" Copy of report. Cholethithasis. Cholis-cystosring.

Abdomen very stout.
Mustrition no frequency.
Nominal movement on respiration.
Tender over whole epigastum.

Some tenderness in both iliac forsac.

No rigidity, kidneys not papaple.

Liver not enlarged, chest H.T., lungs M.A.D.

Heart harmoc at base, cervix small but normal.

Right pamadinan insersion gall bladder great depth from surface.

Choleslystorng.

Gall bladder easily emptied, no stones felt in it.

The appearance was healthy on manual exportation.

The bile passage a small movable nodile was felt in the cystic duct, the gall bladder was opened.

The grundus contained nominal bile from the cystic duct, some white transparent crystralic plagues were removed, the largest ¼-inch square surface one-fourteenth inch depth.

There were some small fragments which looked typical of the structure of cholestral crystals.

A cathat was put into the gall bladder and secured there with a purse strung guture and the wound was closed with catgut and michal clips 3; silkworm gut tenstions stitches also being inserted.

Parth. Report. Pure cholestrol crystals. Drained about 3 X bile.

Condition satisfactory.

Bile not draining well.

Medicine R.X. antropin 1/50 gr., Hroin gr. ¼; A.B.H., R.A. morphin 1/16, A.B.H., R.X. Felamina, 1 tab. T.D.S.R.X., Calamal gr. ii R.X. mistn., N.S.C., W.S., 3 grs. tds. R.X. pil. colocyst clyocyamnm i nocts.

Pathological Laboratory. D specimens of examination. Surgeon, Mr. ——. Patient, E. Jones.

Disease, Chronic cholecystites material crystalline, material from interior of gall bladder.

" Source." Is it cholesteral or glass?

I have never seen such transparent material in a gall bladder.

Report.—Pure cholerterol crystals.—A. R. Rosher, Patolagist."

Sport

Rugby

Guy's v. Old Blues

ON Saturday, November 2nd, at Honor Oak Park, the Old Blues defeated Guy's by a drop goal, a penalty goal and 2 tries (13 points) to a goal and a penalty goal (8 points).

From the Hospital point of view the result was disappointing. They had fully as much of the game as their opponents, but a lack of penetrative power on the part of the three-quarters, Wright always excepted, aided by some really heroic tackling by Fulford, Jones and Undery in the last twenty minutes, gained the Old Boys a well-earned victory, on which we are all the readier to congratulate them in that it was their first triumph over the Hospital since the war.

Guy's had Dick away playing for London against the All Blacks, and the experiment was tried of playing Wright in the centre—not altogether successfully it must be admitted.

Allen made a successful debut at stand-off half, his kicking being especially good, while Stanyon-Jaques gave his best display of the season. He has always been good at stopping rushes and worming his way through his opponents on his own; on this occasion he also passed out well from the scrum. Darke led the forwards admirably and was well supported by Fletcher, and Kark who not only heeled splendidly but was well to the fore in the rushes. Indeed, had he been a shade faster he would have scored two tries in the first half. The Hospital forwards gave a much improved display all round, their packing being particularly good.

Halamandres played his usual resourceful game at full-back, both catching and kicking with precision.

The Old Blues had a sound full-back in Fulford, a very fast wing in R. A. Jones, who also tackled finely, and a fine, bustling set of forwards.

The game opened sensationally, as within three minutes Jones, well in his own half, intercepted a careless pass by Allen and, racing away, showed a clean pair of heels to everyone, to score a fine try, but too far out for Glassborow to convert.

Guy's fought back and should have scored when Allen started a movement which was carried on by Stanyon-Jaques, Darke and Kark, and ended in the last-named being overtaken from behind when two yards short of the line. The Hospital continued to press, but were driven back by Jones's skilful kicking. Allen, however, got the ball hear the halfway line and, after beating two opponents, passed to Wright, who shook off a half-hearted tackle by a defender, dodged the embraces of three more and scored a really good try behind the posts; Kark converted. The ball went up and down the field in rapid fashion. First, Stanyon-Jaques, after a clever run, passed to Kark, and again it was only the latter's lack of that extra yard or so that prevented a score.

Then Jones nearly scored for the Old Boys, who, however, were not to be denied, and, follow-

ing some scrambling play near Guy's 25, Undery as usual appearing from nowhere, rather surprisingly dropped a neat left-footed goal, and the visitors crossed over with a 7-5 lead.

In the first quarter of an hour of the second half it was a case of the Old Blues first and the Hospital nowhere. They kept Guy's penned almost continuously to their own 25, and it was only by the most strenuous efforts, in which Allen's touch-finding played a prominent part, that the Hospital kept the visitors from scoring more than six points, all of which came from Glassborow, who first was up to take a neat reverse pass from Bush to touch-down near the posts and then scored a penalty goal with a kick as praiseworthy as his attempt to convert his own try had been lamentable.

Guy's then seemed to take on a new lease of life and for the last twenty minutes hammered at the Old Blues' line. Three times Wright looked to be through, but Fulford, Undery and Jones—the last-named dashing across from the other side of the field to bring off a magnificent tackle—each prevented him in turn, and the Hospital had to wait till the last minute of the game to increase their score, when, from a penalty for "feet up," Kark kicked a beautifully accurate goal from near the touch-line.

Team.—C. Halamandres; A. E. Baxter, C. G. Wright, I. McD. S. Stewart, E. M. de Gregory; R. D. Allen, K. A. Stanyon-Jaques; A. J. Drew, M. R. Kark, C. G. Darke, E. B. French, E. R. Davies, R. O. Yerbury, P. Fletcher, F. Walt.

Guy's v. Cambridge University

ON Wednesday, November 6th, Guy's visited Cambridge and, after an interesting game, the Varsity were successful by 2 placed goals and 3 tries (19 points) to a placed goal (5 points).

Although they were without Wooller and Cliff-Jones, Cambridge fielded a strong side, and Guy's were practically at full strength.

The Hospital were soon five points in arrears when a Guy's kick was charged down near the goal line and Hunter picked up to score a try which Fyfe converted.

For a long period the exchanges were even, but after twenty minutes Lord sent a long pass to McDonald, who drew the defence for Rawlinson, showing a strong burst of speed, to run over near the corner. Fyfe again converted with a grand kick from the touch-line.

Soon afterwards rain fell heavily, and the subsequent play was never of such good standard; both sides were guilty of faulty handling and missed passes owing to the slippery state of the ground.

Guy's pressed heavily in the second half and for some time Cambridge had to do plenty of defending, but when they rallied they had the bad luck to lose Inglis, one of their forwards, through injury.

Still they hung on to their advantage, and before the finish added three tries in quick succession. First Low slipped round the scrum for a try, then Fyfe, now more in evidence, scored another, and Lord also crossed after a loose scramble.

Just on time, Dick ran through cleverly and, after a fine solo effort, scored the Hospital's only try, which he converted himself.

Halamandres again played an excellent game; his fielding and kicking were faultless, but the rest of the backs were not up to their usual standard and could claim no superiority over the Varsity.

The forwards, after a disappointing start, settled down and did exceedingly well, especially in the early part of the second half, when they hammered away continuously.

Team.—C. Halamandres; C. G. Wright, R. C. S. Dick, J. van A. Steytler, I. McD. Stewart; R. D. Allen, K. A. Stanyon-Jaques; C. S. Darke, M. R. Kark, A. J. Drew, E. R. Davies, E. B. French, P. Fletcher, R. O. Yerbury, F. Walt.

Guy's v. Birkenhead Park

VISITING Birkenhead on Saturday, November 9th, Guy's suffered defeat by 3 placed goals and 2 tries (21 points) to 2 tries (6 points).

Guy's took a long time to settle down, and for the first twenty minutes found the Park irresistible, and before the effects of their long journey had disappeared, the home side piled on all their points without reply. During this period the Hospital forwards were overplayed, especially in the set scrums, where the Park secured the ball at ease. Their half-backs, Steele and Maguire, completed the discomfiture of Guy's by setting the threes in action whenever the opportunity presented itself, and Knowles and Morton had no difficulty in racing through the centre for their wings to score the necessary tries.

It was Knowles who initiated the first two tries, when on each occasion he drew the defence before passing to Hancock to score tries, the second being converted by Green. After Morton had registered a try himself, he eventually fed Slater (the right wing) so well, that the latter had no difficulty in rounding Rees and Baxter for another try, two of these tries being converted, one by Green and the other by Steel. Although Guy's improved towards the interval, they could not prevent Edgar from crashing his way over for a try following a dashing forward burst.

Guy's rearranged their back division in the second half and, with Dick and Wright in the centre and Baxter at fly-half, they gave a much more convincing display. The passing and repassing movements of Morton and Slater, which had been exploited so successfully, were anticipated, and on two occasions Guy's intercepted.

Wright successfully intervened in one effort, and followed it up by racing half the length of the field to score a really spectacular try.

Guy's now found little difficulty in holding the Park in check, although on one occasion Hancock nearly got through following a long run, but hesitated at the critical moment and lost the ball.

Wright was slightly injured and was off the field for a time, but he marked his return by scoring another try following a good dribble by Dick.

The Hospital continued to have the advantage, but the home side were equal to all demands and prevented Guy's from crossing their line again.

Team.—C. Halamandres; C. G. Wright, I. McD. G. Stewart, G. F. Rees, A. Baxter; R. C. S. Dick, K. Stanyon-Jaques; C. S. Darke, M. R. Kark, A. J. Drew, E. R. Davies, E. B. French, S. M. Whitteridge, R. O. Yerbury, F. Walt.

Guy's v. St. Bartholomew's

GUY'S were beaten by Bart.'s at Winchmore Hill on Wednesday, November 13th, by a placed goal (5 points) to nil.

What with the claims of county matches and injuries, Guy's had what was practically a reserve team out, while Bart.'s had at least ten members of their regular side, the losers can congratulate themselves on the narrowness of the margin against them.

For Guy's, Llewellyn gave a creditable display at full-back, tackling and catching with sureness, though at times his kicks did not always find touch. Douglas was the best of the "threes," and he showed much future promise, and in Youngman he had to mark—and did so with success—the speediest player on the field.

Chapman at scrum half was playing behind a pack beaten for possession in seven scrums out of eight, while, in addition, he found Hearn playing at the top of his form. Stewart did not have many chances at fly-half, but once or twice broke through cleverly while he was the only one of the Guy's centres to tackle satisfactorily.

Darke as usual led his forwards splendidly, and Yerbury and Whitteridge had their moments, but the success of the afternoon, as far as Guy's was concerned, was Sharp playing as a back-row forward. He apparently revelled in his new position and was always prominent at the line-out and in the loose.

Morison played his usual unruffled game at full-back for Bart.'s, his fielding and touch-finding being deadly in their accuracy. Youngman impressed on the wing; he scored one good try, and had hard luck in being deprived of two others by stepping into touch. Hearn was very good at scrum-half and sent out a constant stream of long passes. Mundy, Dransfield and Newbould were the pick of a hard-working pack.

Guy's were the first to be dangerous, but Douglas, after a clever burst-through and punt ahead, was a little slow in following up, and Morison touched down. Bart.'s then attacked, but were three times driven back by penalty kicks when they looked all set for a score.

The Guy's forwards were doing well in the line-outs and loose scrums, but were generally beaten in the tight. After twenty minutes Hearn picked up in the loose just inside Guy's half and, evading several half-hearted attempts to tackle him, broke right through. When faced by Llewellyn, Evans was up to take his pass, and when Douglas went for the latter he gave to Youngman, who completed a nice movement with a try behind the posts, which Newbould converted.

The remainder of the first half was noteworthy only for the kicking of the respective full-backs, each of whom often saved his side when hard pressed.

In the second half Guy's began to heel the ball, but the threes could not get going properly, though possibly the ball, which by this time had become very wet and heavy, had something to do with the number of dropped passes.

Youngman dashed away for Bart.'s, but Douglas brought off a fine tackle. Then Hearn broke right through and gave to Youngman, who crossed but was called back for an infringement. Five minutes later Youngman again got away; he eluded both Douglas and Llewellyn this time, but unfortunately put a foot into touch in doing so.

Guy's forwards, in a series of loose rushes in which Darke was conspicuous, took play to the other end, and Whitteridge was held up on the line.

"No side" was called with Guy's still endeavouring to break through a defence which held out to the end.

Team.—O. P. Llewellyn; D. M. Douglas, P. H. Birks, G. Rees, R. M. de Gregory; R. McD. G. Stewart, D. I. Chapman; C. S. Darke, M. R. Kark, P. Crampton, P. Green, E. R. French, R. O. Yerbury, S. M. Whitteridge, E. C. Sharp.

Guy's v. Rosslyn Park

GUY'S played one of their best games of the season on Saturday, November 16th, when they defeated a powerful side from Rosslyn Park by a penalty goal and a try (6 points) to a placed goal (5 points).

The success of the Hospital was all the more meritorious when one takes into account that they had several of their regular team away injured, and at the last moment Dick was unable to play on account of the illness of his father.

The heavy rain which had fallen during the preceding twenty-four hours had made the pitch very heavy and muddy and, considering the conditions, the game throughout was of a particularly high standard.

It is true that Guy's won by the slenderest of margins, but they should have had at least another two or three tries, but the treacherous state of the turf and the greasy ball caused Guy's to make mistakes when well placed. No doubt their success in this game will do much to encourage the side which has been distinctly unlucky so far, and give them the confidence they need for their important games to come.

The Hospital forwards improve in every game, and on this occasion they excelled themselves. In the set scrums every man pushed his weight and Kark hooked the ball almost regularly, whilst in the loose, where Fletcher and Yerbury were prominent throughout, they were on the ball in a flash and harassed the Park's defence continually.

Stanyon-Jaques played an exceedingly good game, and he found an excellent partner in I. McD. G. Stewart, whilst at full-back, Halamandres was coolness personified, fielding the ball with accurate judgment and kicking magnificently.

It was not a day for finesse, but Guy's handling was so much surer than their opponents that they forced the Park into a rearguard action.

Whenever they were repelled, and on several occasions they had to defend hard in their 25, Guy's returned to the attack, and were unfortunate not to score more often than they did.

The Hospital took the lead after fifteen minutes' play as the result of a clever individual effort by Stanyon-Jaques. Guy's heeled quickly from a scrum some thirty yards out and Stanyon-Jaques, feinting to pass to Stewart, broke clean through, and Fletcher was up to take the pass and register a try which Kark just failed to convert. This reverse aroused the visitors, and for a few moments it looked as though they would equalise, but over-anxiety on their part cost them a penalty, and Kark kicked an easy goal. Kark should have had another a little later, but the kick fell short.

The second half opened with an onslaught on the Guy's line and, following two scrums five yards out and a determined run by Button, Hallam broke through and just managed to get the ball to Instone, who flung himself over the line near the posts for a try, which he converted.

From now onwards the Park concentrated on defence, and on several occasions good passing movements between the Hospital backs broke down owing to the accurate and sure tackling by the Park's threes. Wright went through on one occasion, but slipped when about to round the full-back. Guy's continued to get more of the ball in the scrums, swept down the field in irresistible style, and hammered and harried their opponents with magnificent fire and energy, but the Park held out and no further score resulted.

It was a splendid game, and if Guy's can maintain this form they have no need to worry about games to come.

Team.—C. Halamandres; D. M. Douglas, P. H. Birks, C. G. Wright, G. F. Rees; I. McD. G. Stewart, K. A. Stanyon-Jaques; P. H. Crampton, M. R. Kark, C. S. Darke, E. B. French, E. R. Davies, R. O. Yerbury, P. Fletcher, E. C. Sharp.

Hockey

Guy's v. Middlesex

ON Saturday, October 26th, the 1st Eleven met Middlesex Hospital on the Middlesex ground at North Wembley. The pitch appeared in good condition and gave promise of a fast game. Guy's were without the services of J. B. Franklin and had to field a reserve left wing.

From the beginning Guy's attacked strongly, but the forwards lacked the finish which they had shown in earlier games, and were unable to overcome the rather bustling tactics of the Middlesex backs and halves. The Middlesex forwards made attacks on the right wing and in the centre, and H. V. Brown, in the Guy's goal, was called upon to kick clear on several occasions. The clearing of the Guy's backs and halves was not good, and it appeared that the ground was playing more slowly than any we had played on this season, in spite of our earlier anticipations of a fast game.

About ten minutes before half-time, E. J. Martin stopped the ball from a short corner for A. G. Richmond to send in a shot which gave the Middlesex goalkeeper no chance. There was no further score before half-time.

In the second half, Guy's halves opened up the game more and the forwards showed better

combination. Middlesex still attacked occasionally, and from a clearance from one of these attacks F. Butterfield received the ball on the right wing, just on the Middlesex side of the halfway line. He ran through on his own, beating two defenders and scoring with a hard shot. Soon after this, E. J. Martin added a third goal, receiving the ball from a pass from the right wing.

After this, play was mainly in the Middlesex half of the field. Guy's fourth goal was scored by E. J. Martin. There was no further score, and the game ended with a victory for Guy's by four goals to nil.

Team.—H. V. Brown; J. S. Astbury, R. G. Archer (Capt.); A. C. Greene, A. G. Richmond, C. F. Wright; D. S. Foster, G. C. Bough, E. J. Martin, E. J. F. Hinde, F. Butterfield.

Guy's v. Hertford College, Oxford

ON Saturday, November 2nd, the 1st Eleven entertained Hertford College, Oxford, at Honor Oak Park. The ground was wetter than it had been for some time, but in spite of this it played fast and did not wear badly. The Hospital team was again below full strength, and included reserves on the left wing and in goal.

Archer won the toss and decided to attack the Stillness Road end of the pitch. The Guy's forwards were upset by the bustling tactics of the Hertford College defenders, and several minor injuries were sustained. Although doing most of the attacking, Guy's were unable to score in the first half, several good attempts being frustrated by the College goalkeeper, who was playing well. Guy's goalkeeper had only one shot to deal with.

In the second half, Guy's attacked even more insistently, and their perseverance was rewarded when about ten minutes after the resumption E. J. Martin scored, having got the ball clear from a tussle on the edge of the circle. The Hertford College forwards made occasional raids, which were generally easily repulsed by the Guy's defenders, of whom R. G. Archer played an outstanding game.

There was no further score, and the game ended with Guy's winning by the narrow margin of one goal to nil. The game had been at times more boisterous than good hockey should be. Allowing for this fact, the team showed improvement on their form in recent matches, though it was not their best. The wing halves were more effective than in previous games, and E. J. F. Hinde at inside right played well, his defensive work being especially useful.

This was Guy's fifth victory this season, the team having been defeated only once. Thirty-four goals have been scored for and eighteen against.

Result.—Guy's, 1; Hertford College, Oxford, 0.

Team.—R. A. Keeler; J. S. Astbury, R. G. Archer (Capt.); A. C. Greene, A. G. Richmond, C. F. Wright; D. S. Foster, G. C. Bough, E. J. Martin, E. J. F. Hinde, F. Butterfield.

Boxing

ON Friday, November 8th, the Hospital met the Belsize Boxing Club in a team match at Thames House, Millbank, and lost by 2 matches to 4.

Feather.—H. Merrick lost to G. T. Robertson.

Light.—A. Halamandres beat G. C. des Salles.

Welter.—O. P. Llewellyn lost to P. Dee.

Middle.—J. S. F. Watson beat G. R. Weil.

Light Heavy.—C. F. Ziervogel lost to W. B. Waterfall.

Heavy.—P. J. Fletcher retired to C. H. Dixon.

This was the first of several matches which have been arranged during the season. The bouts were all keenly contested, and it was evident that the coaching given by Alf Hewitt will result in a high standard of boxing.

The Belsize Boxing Club is one of the leading clubs in London, and it was a most creditable performance on the part of the Guy's team to run their opponents so close.

The contests between A. Halamandres *v.* G. C. des Salles and J. S. F. Watson *v.* G. R. Weil were excellent. Owing to a rugby injury sustained in the match against Cambridge University, C. Halamandres was not able to box, and his brother, A. Halamandres, who took his place, was faced with the prospect of meeting G. C. des Salles, an Oxford "Blue." From the start des Salles tore into his opponent, but Halamandres remained cool and successfully weathered the storm. Having survived the opening round, Halamandres proceeded to give a most finished exhibition of boxing, and is to be congratulated upon his fine win.

J. S. F. Watson was treated to similar hurricane attacks in his match with G. R. Weil, but, instead of lying down, which to me seemed the most sensible thing to do, he also adopted storming tactics, and we were treated to a spectacle of furious fighting. The final round was conducted in a more leisurely fashion.

It was most unfortunate that P. J. Fletcher had to retire in the first round of his match with C. H. Dixon, owing to a dislocated shoulder, and we hope he will soon be quite fit again.

Merrick, who was giving away a lot of height and weight to his opponent, fought very pluckily, and was not far behind on points at the end.

O. P. Llewellyn was unfortunate enough to encounter a much more experienced opponent, whose height and reach were too much for him.

The fight between Ziervogel and Waterfall was very closely contested; if only Ziervogel would hit straight there are very few in the hospitals that would approach him at his weight.

The Club would welcome any newcomers to the Hospital, whether with or without previous experience, and they can be assured of every encouragement from the instructor, Alf Hewitt. Training takes place in the Pavy Gymnasium on Tuesday evenings at 5 p.m.

Squash Racquets

Guy's v. The Jesters

Result.—Guy's lost 4—1.

M. A. Partridge lost to P. Couran, 8—9, 1—9, 3—9.

C. A. Boucher lost to R. A. Lumb, 5—9, 7—9, 1—9.

Gilbert Harris lost to C. C. Stubbs, 10—8, 9—10, 5—9, 10—9, 3—9.

P. W. Clarkson beat C. Donner, 9—5, 9—2, 9—1.

H. C. Davies lost to H. Eves, 3—9, 5—9, 4—9.

Hospital Information, etc.

Books

The first volume of "Post-Graduate Surgery" is to appear in December, the second and third volumes are expected early in the New Year and Autumn. These volumes are to be published by Medical Publications, Ltd., at the cost of £2 2*s.* each.

Landon Tea

Sister Out-Patients is again appealing for help towards the Landon Tea and Entertainment, to be held as usual on Christmas Day at 2 p.m., in the Out-Patients' Hall. Funds are urgently needed and gifts of toys of all kinds (particularly dolls) would be much appreciated.

Pass List

CONJOINT BOARD.

FINAL EXAMINATION.

October, 1935.

Pathology.

H. M. S. G. Beadnell
G. L. Burgess
M. A. Hai
L. N. Kaplan
F. R. Malan
R. C. Neville
F. J. R. Stoneham
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A. G. W. Hill
*W. Hughes
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*R. A. Johnson
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*C. W. F. Outred
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*J. T. Waldie

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W. Hertzog
O. Hughes
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L. Merrill
F. L. E. Musgrove
W. M. Philip
*E. B. Rowe
T. A. Turnbull
G. N. Wright

Midwifery.

O. B. Alakija
H. M. S. G. Beadnell
W. J. Gardner
O. Hughes
E. Kaplan
L. N. Kaplan
L. G. Lyle
D. H. Mackay
F. R. Malan
R. C. Neville
C. S. Pitt
D. G. Price
A. N. Redfern
E. Sayle
T. A. Turnbull
A. S. Woolstone
Z. E. Zuckerman

*Have now qualified.

Papers by Guy's Men

F. N. Doubleday. The pathological evidence afforded by dental skiagrams. *Dental Record*, 1935, lv, 659.

Engagement

SUTTON—FENNER.—The engagement is announced between John S. F. Sutton, L.R.C.P., M.R.C.S., North Lodge, Abridge, Essex, and Phyllis Evelene, only daughter of Mrs. E. Fenner, Greece.

Marriage

KING—STUART-COOK.—D. P. King, M.B., B.Ch., to Pamela Stuart-Cook, on October 18th, 1935, at the Chapel of the Savoy, London.

Birth

BATCHELOR.—On November 4th, 1935, at Putney Hospital, to Marjorie (née Rudkin), wife of J. S. Batchelor, F.R.C.S.Eng.—a daughter.

EDS. { P. W. C. / M. A. P.

GUY'S HOSPITAL GAZETTE

A Journal of Medicine, Surgery, Dentistry and Hospital News.

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Volume XLIX *7th December* 1935 *Number* 1236

PASSIM

WE are very glad to hear that the vacancy on the General Staff caused by the departure of Dr. Ryle for Cambridge has been filled by Dr. Hampson, formerly assistant physician to the Children's Department. Dr. Hampson, who during the war was a Major in the Royal Artillery and won the Military Cross, came to us from Cambridge in 1921. He qualified in 1924, and became Assistant House Surgeon to Mr. Rowlands and Mr. Bromley, and House Physician to Dr. Fawcett and Dr. Ryle. Having demonstrated physiology for two years, he became a medical registrar in 1928, and was elected to the Staff as assistant physician to the Children's Department in 1930. For some years he has been associated with Dr. Bishop in establishing the Endocrine Clinic, which started as an adjunct of the gynæcological department, and as a pædiatrician he has been associated with notable advances in whole blood therapy and in the treatment of meningitis in infants.

ARRANGEMENTS are now complete for the opening of Nuffield House on Tuesday, December 10th.

At 1 p.m. the Governors and members of the Staff will entertain representatives of the Press to luncheon in the Counting House. If the weather is fine, H.R.H. The Prince of Wales, who is President of the Governors, will be received at the Counting House at 3 p.m. Members of the Medical School may gather to welcome him as he proceeds thence through the Colonnade to the Out-Patient Hall, where the ceremony will take place. In the event of rain, the Prince will enter the Maze Pond entrance by car and be received under cover at the entrance by Nuffield House.

For the ceremony the accommodation is limited and admittance is by invitation only. Arrangements have, however, been made for members of the Hospital to listen by loud-speaker outside Nuffield House to H.R.H.'s address.

No regular Out-Patients will be held on Tuesday and only emergency cases will be seen; in the Medical School there will be no classes during the afternoon.

These arrangements have not, however, been made exclusively to enable as many as possible to attend the Varsity match. House Officers are to act as ushers in the Out-Patients' Hall, and members of the Medical School are expected to add their presence to the throngs in the Park.

After the ceremony H.R.H. will view Nuffield House; there will be tea in the Nurses' Home, and Nuffield House will then be open to inspection by the visitors.

THE Hospital has sustained a great loss in the deaths of Lady Perry and Mrs. Arthur Richmond, who were two of our best known and most devoted helpers and supporters. Both have had long connection with the Hospital; Lady Perry, as wife of the Superintendent, lived for many years in the Treasurer's House, and never ceased to take an active interest in the Hospital, and Mrs. Richmond, also connected with the Hospital through her husband, spent years of labour in organising a library service for the patients. Through their activities they will always be remembered. It was largely through the zeal and energy of Mrs. Richmond that the Guild of Hospital Libraries was formed, and the institution is a permanent reminder of the labours which she undertook on the In-Patients' behalf. Lady Perry was one of the founders of the Newcomen Chil-

dren's Nursery, with which her name will always be associated. Obituaries appear on another page.

READERS of the evening newspapers will have learned that ice-hockey has been taken up by the various London hospitals, and a movement, started at St. Thomas's, has been made to start an inter-hospitals' competition.

A Hospital team is to be formed. Under the secretaryship of Mr. R. J. Simms, two sessions a week will be held at the Empress Skating Rink at Earl's Court, where professional advice will be available. Any beginners are welcome, and it is hoped to form a team to compete in the inter-hospitals' competition by next year. Further information may be had on application to the Secretary.

THERE is a scene in "Zuleika Dobson" in which a certain noble Lord, an undergraduate of Oxford who is the last surviving member of an ancient and historic club, holds an annual election of new members. He reads the list out to himself, Mr. So-and-so, proposed by Lord X (we forget his name for the moment), seconded by Lord X; Mr. Someone-or-other, proposed by Lord X, seconded by Lord X, and so on; the old servant brings the ballot box into the club room and sets it before the Committee, consisting of Lord X, who sits for some time wrapped in thought. But, at the end of the election, when the President, Lord X, and the Secretary, Lord X, and the Treasurer, Lord X, have all voted, each member has somehow received three black balls.

The Residents' meetings on the question of the "Niggers" always remind us of the pleasant formality in that historic club. For weeks beforehand we hear that there really cannot be any more Niggers this year. The Niggers, they say, are grotesque, they are undignified, they are not entertaining, they are deplorable. The Residents are agreed that there can be no Niggers. So it has been for years; perhaps so it has always been. But there always are Niggers, and there are Niggers again this year. The Residents' meeting to decide whether there shall or shall not be Niggers was held with the certainty of veto tripping off every tongue. The result was unanimity in favour of continuing the custom. And so, one supposes, it will always be. We shall see the old black faces again, but fortunately with one reform. Those solo parts, some of which have hitherto caused us to feel hot with embarrassment and sympathy, are to be discontinued, and communal singing only will take place. We congratulate the President, Mr. C. A. Boucher, on this reform, which we feel to have been overdue. The Residents' Play will take place towards the end of January.

IT is with regret that we hear of the impending retirement of Mr. R. W. Robbins, the Hospital Renter and Registrar, who has been in the service of the Hospital for forty-eight years. During this long period his work has been mainly connected with the Hospital estates, and his knowledge of old deeds and records is unrivalled, and will be much missed. He has the remarkable record of having served under four Treasurers—Mr. E. H. Lushington, Sir H. Cosmo Bonsor, Viscount Goschen and F. P. Whitbread.

THE strenuous rivalry that has always existed between Mr. Davies-Colley's and Mr. Slesinger's firm has now extended from tugs-of-war in the Park to encounters on the golf links. Though this innovation, taking place, as it did, at Sidcup, was less spectacular than the tug-of-war as far as the Hospital and its patients are concerned, it was rendered remarkable to the players by a singular occurrence. At the sixth hole Mr. Eckhoff's ball flew from the tee and was lost to sight, until after some minutes' search it was found nestling in the hole. After the resultant hospitality the intention was announced of contriving to produce a repetition of this phenomenon next year.

Obituary

LADY PERRY

TO all of us who were associated with Guy's before the Great War Lady Perry's name brings happy memories, and her death on November 20th filled us with a sense of personal loss.

Caroline Matilda McManus was the child of Irish and English parents. She was born in 1850 at Demarara, where her father, James McManus, managed a sugar plantation. When she was about four years old her family returned to

Ireland, bringing with them a liberated slave, who was their faithful nurse for many years. Caroline was devoted to her, and stored in her memory many of the tragic tales she used to tell. Mr. McManus farmed the family estate at Killeaden, Co. Mayo, and here Caroline spent a very happy childhood. She was educated at home and at schools in Torquay and Bath.

In 1880 farming was badly hit by a cattle plague, and it became necessary for her to earn her living. She chose nursing, and trained under Miss Brown at Addenbrooke's Hospital, Cambridge, where she became a Sister. Later she moved to the London Hospital, where she held the appointments of Sister Blizzard and Night Sister. Her life at this time must have been a strenuous one, for after nursing all night she frequently massaged until bed-time at noon.

In 1888 she took up private nursing under Dr. Playfair at home and abroad.

It was at Addenbrooke's that she first met her future husband, then a medical student. Their common interest in literature, especially classical history, resulted in a close friendship, and during a holiday in Algiers some eight years later they became engaged. They were married in 1890.

Dr. Perry was then Assistant Physician, Dean of the Medical School and Warden of the College at Guy's, and the first two years of their married life were spent at the Warden's House. On his appointment as Superintendent they moved to the Superintendent's House, and in 1897 they transferred to the house which had hitherto been the residence of the Treasurer.

They had one daughter, Mary, who married Mr. F. Crook, a Guy's man.

The Treasurer's House was the centre of much kindly and simple hospitality, and all who met there were very quickly made to feel at home in the big family of Guy's. At that time the junior members of the Staff lived in St. Thomas's Street, and it was to Lady Perry that we all turned. She led us in our social life, rejoiced with us, mothered us in our troubles. She could speak straightly when occasion arose or touch with humour the domestic problems of our daily life. She was a keen advocate of the Guy's Ladies' Association, and we dared not shirk our responsibilities in that direction.

She always took an active interest in women's work, and for many years she was a Governor of the Newcomen Domestic Training School, a Trustee of the Newcomen Day Nurseries and the St. Olave's Nursing Association.

Though eminently a practical woman, the Irish side of her nature was always uppermost. She was imaginative, loved folk lore and poetry and all outdoor life, with the exception of caterpillars, which she found difficult to reconcile with butterflies.

Lady Perry's later years were spent at Worthing, where she delighted in her garden and the frequent visits of her three small grandsons. She was one of those wonderful people who never grow old. Her imagination, humour, love of young people and interest in the world remained with her to the end. For these and for her many kind deeds we loved and honoured her.

E. D.-C.

MRS. ARTHUR RICHMOND

(Reprinted from *The Times*, 27th November, 1935.)

MANY who are associated with the National Council of Social Service and especially with the work of the Rural Community Councils will wish to pay a last tribute of thanksgiving for Mrs. Arthur Richmond, who died on the 22nd. Her beauty and graciousness lent a fragrance to the first Conference on Rural Work which the Council held at St. John's College, Oxford, in 1921, and as hostess for the Council at the annual conferences of later years her delicate courtesy set a tradition which those who follow will strive to maintain. At other times of special pressure she was always ready to help until of recent years her work at Guy's Hospital left her little leisure for anything else. At Guy's she started to build up a library service for patients (in connection with the British Red Cross Society) which as it exists to-day is indeed a fine memorial to her. She took infinite pains both to find out personally the interests of patients and to give them the chance to read on those subjects. Very many, under her guidance, discovered the joy of reading for the first time while in hospital. Mrs. Richmond was keenly interested in the establishment of the Guild of Hospital Libraries and was a member of the Guild Committee. Her gentle kindness and her great beauty will remain with us as a very precious memory.

In Memoriam

HERBERT CECIL MALLESON, M.R.C.S., L.R.C.P., L.D.S.

Words spoken at the Crematorium, Golders Green, on November 15th, 1935, by Rev. C. M. Wright, M.A.

AT Guy's Hospital, on Monday, an "In Memoriam" tribute will be paid to Herbert Cecil Malleson. No doubt many students and members of the Staff will think of his long association with the Hospital—an association extending over more than thirty years; of his great ability and wide experience; and of his attainment of the honourable position of Senior Surgeon in his own department of hospital work.

But on this occasion, when his friends have sorrowfully gathered together to say "Farewell," I should like to have the privilege of trying to express some of the thoughts and feelings which are common to us all. When we grieve for the loss of a husband, a father, and a friend we are not greatly concerned as to whether he was famous or insignificant, rich or poor, or whether he possessed exceptional ability, or not. We are thinking of a human being whom we have respected admired and loved.

There are two fundamental facts in human experience; one is life, the other is death. Whatever theories we may hold, or not hold, whatever beliefs we may cherish, or not cherish, those two facts of experience must be accepted and shared by all alike. Wherever there is birth, sooner or later there is death. There is no escape from the fact of death. Sooner or later we shall all have to face the mystery and the experience of death. Nor is it morbid, or unnatural, or unhealthy, to think sometimes of the fact of death.

But when death comes unexpectedly, when we have been hoping for a restoration to health and strength, and when, it may be, our whole outlook on life is suddenly changed—then the fact of death is hard to endure. There is a sense of irreparable loss, and no words of consolation can assuage our grief.

Yet there are happy memories of a husband, a father, and a friend. More than once I have been told how "popular" he was. When a man is popular it is because there is something in him which attracts others to him, making them respect and love him. He was popular because he was simple and natural, modest and generous, kindly and friendly. I remember him saying to me in a half-jocular mood, "Oh, I don't think that I'm very religious." Men often say that. It is an affirmation which may be due to dissatisfaction with the conduct of many so-called "religious" people, or to the consciousness of personal limitations. Men feel that they fall so far below that rapturous, ecstatic, religious faith which is traditionally associated with the lives of the "saints." But when a man is kindly and friendly, generous and modest, sympathetic and anxious to be of some use to others, he has the very foundations of the religious life in him—foundations without which no profession of a religious faith is worth anything at all.

Next to his family and friends he loved his garden. Some of us know what time and thought he gave to the cultivation of his garden. He loved the beauty of many-coloured flowers, which is one of the revelations of the mind of the Divine Artist. The poet has sung that we are "nearer God's heart in a garden than anywhere else on earth."

How strange it is that we should go on day after day doing our work, paying our way, enjoying our pleasures, gaining our little successes, looking confidently towards the future, and then suddenly death comes, and our little world of experience and hope seems to be broken to pieces. Sympathy can help us, but not very greatly, and no human lips can explain to us why there has been so much pain and suffering. Then we are flung back on faith, this mysterious power deep down in our hearts, often forgotten and ignored, often criticised, and yet abiding—this mysterious faith in a power we call "God"; faith in an after-life; faith that life and love cannot die.

We are all familiar with the phrase, "In the midst of life we are in death." It is said that many centuries ago in France men were building a somewhat frail bridge across a narrow and dangerous ravine. One day a man stumbled, lost his foothold, and fell to his death in the depths below; and a pious monk who saw the accident ejaculated, "In the midst of life we are in death." That is said to be the origin of a saying which is now familiar.

But then we turn to this power we call faith, deep down in our hearts, and, changing the reflection from the negative into the positive, we affirm that "In the midst of death we are in life." Death is a change. Death is a transition.

Out of the dark, dank, apparently dead earth in winter time will come again the bright colours of the flowers. Out of this dark experience there has been a resurrection: Love, hope and faith will bloom again, even on a cross.

And in the Garden of Memory, as the years go by, we will often walk with him, whom we have lost awhile.

Two Cases with Pathological Specimens (Coronary Thrombosis and Mitral Stenosis with Multiple Emboli)

A Clinical Lecture delivered at Guy's Hospital on May 17th, 1935, by Maurice Campbell, Esq., O.B.E., M.D., F.R.C.P.

GENTLEMEN,—To-day I want to talk to you about two cases of which I have specimens to show you—one with coronary thrombosis on two occasions and the other with a long history of mitral stenosis and auricular fibrillation, whose death was due to multiple emboli. I shall mention less fully another patient with a coronary thrombosis.

The first is that of a man, aged 49, whom I saw in January last, complaining that when he walked a hundred yards he had pain in the mid-line at the level of the second and third intercostal spaces. It was so severe that he had to stop, and when he stopped the pain went away and enabled him to continue. It was, therefore, a typical instance of angina pectoris, and as in so many cases of angina, physical examination added little to the story. The heart was slightly enlarged to the left, with rather equally spaced heart sounds. The arteries that could be felt in the arms and legs and the retinal arteries were good, and there was no evidence of arteriosclerosis. The blood pressure was normal, 120/80, and the electrocardiogram was not very abnormal, though I shall have more to say about that later. On my advice he came into hospital.

The first point I want to emphasise is the reason I picked him out as a case for thorough rest, rather than allowing him to continue quietly with his ordinary life as one may in many cases of angina. The most important reason was that he had felt this pain only during the last year; it had been getting very much more severe for the last six weeks, so that just before I saw him the distance he could walk without pain had come down to ten yards. He was taking tablets of trinitrin most days, and they eased his pain. Another point which is interesting, because it is often found, is that he was still able to lift hundredweight sacks in his shop with ease without the exertion causing pain. I am often surprised to find that angina patients are able to do their work so well; there seems to be something peculiar in the effort of walking which brings on the pain.

Looking back into his past history there was one significant point. In 1931, he said, he strained himself and had to send for a doctor in the middle of the night because of what he described as terrible pain. It is unusual for strain to have much to do with sudden pain of that type, and though he had been lifting heavy cases of milk that day, he had not noticed anything at the time. The strain was his own explanation of the attack at night; it was not my explanation.

It is very rare for any strain to lead to such severe pain that the doctor is sent for in the middle of the night. The pain was in the same place as his angina, and it lasted five hours, until he had an injection. So there is a clear history of the first onset of cardiac symptoms with a coronary thrombosis that night. From this he made a good recovery, and was almost without angina for three years, after which it became progressively worse. In his heart you will see the two pathological changes represented by those separate episodes.

With regard to the immediate treatment at the time of the first attack, he would have got up the next day, because he felt well; but his doctor kept him in bed five days, after which he was allowed up and resumed work. You must not assume that a severe attack of pain is not coronary thrombosis simply because normal life could be resumed in a few days. Sometimes patients "get away with it," but among the cases of sudden death are many who are walking about too soon after a coronary thrombosis. It is possible that, had our patient rested more completely at that time, the recovery of his heart muscle might have been better, and he might have been less liable to anginal pain subsequently.

The other point in his history was that during the last six years he had had some pain after his meals, of a type suggestive of duodenal ulcer, and it sometimes woke him in the middle of the night. And though the pain was rather high for duodenal ulcer, it was not in the same site as his anginal pain. When he was in hospital his X-ray showed irregularity of the duodenal cap, though he was having no active digestive symptoms at that time. The post-mortem revealed scarring of two old duodenal ulcers. The association of angina with duodenal ulcer is more than you would expect on mere chance; it is important, because the two conditions can be mistaken for each other. The fact that anginal pain comes on after a meal can suggest the picture of ulcer, and I have seen many patients with angina in whom the symptoms pointed to the presence of an ulcer, though investigations did not confirm this. Sometimes, as

in this case, there is dyspepsia associated with heart trouble, and duodenal ulcer and coronary disease are both present.

This patient was admitted to hospital and at first did fairly well; he was free from pain and, after a few weeks' rest, we started getting him up and letting him get about. At first he seemed to be keeping more free from pain and was able to walk further. The first unsatisfactory sign was seen in the electrocardiogram which was taken a fortnight before he died (Fig. 1*b*), as this showed

a. *b.*

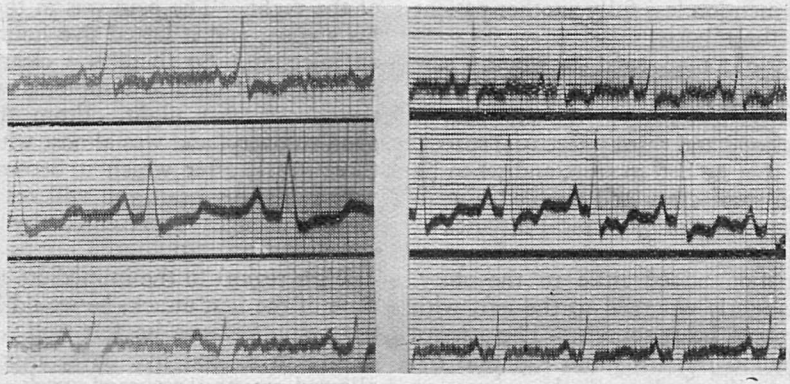


Fig. 1.

a. Electrocardiogram on admission to hospital showing slight inversion of T in lead I and biphasic T in lead II; ten days before admission the T waves were less inverted. *b.* Electrocardiogram two weeks later (two weeks before his death) showing increasing inversion of T waves in leads I and II.

progressive changes, especially the increasing inversion of T in lead II, compared with the one taken when he came into hospital (Fig. 1*a*); there was increasing coronary sclerosis, and that was soon confirmed by the clinical findings, because he began to get much more pain, even in the quiet conditions of the ward, and he had to go back to bed. For the last two days of his life he was in constant severe pain, which could only be controlled by morphia. There is, therefore, the complete picture of the original coronary thrombosis with very good recovery; later of increasing angina due to narrowing of his coronary arteries; and, after a time, of a second complete occlusion, which led to a fatal terminal infarct.

The heart shows a large area of scarring, which represents the infarct, almost four years old. It is situated in the middle half of the anterior wall of the left ventricle and extends to the right into the interventricular septum. In many specimens you see an area of ventricular muscle has become very thin, and later this may develop into an aneurysm. The recent infarct is more difficult to follow, as forty-eight hours is not long enough for the changes to develop fully. The sooner a patient dies from a coronary infarct, the less you see of the muscle changes and the more you have to depend on the changes in the coronary arteries. Here there was recent blockage as well as this old scarring, the main trunk of the right being completely occluded by calcifying atheroma, with added recent thrombosis about one and a half inches from the orifice. But, except for these crucial atheromatous changes in the coronary arteries, there is little to comment on; the aorta is good, and it is difficult to see why he should have developed these changes at 49 years of age.

In most of these cases, I think, there is a strong family history, but in this patient's case there was none. His mother was still alive; his father died at the age of 86, not of cardiac disease. All his brothers and sisters were alive. He had worked very hard since he was nine years of age, and he said that his period in the army during the war was the only holiday he had ever had. There is no doubt that hard work, particularly when combined with mental worry and anxiety, even about money, tend to cause this condition. When you have seen a large number of patients with angina you will realise that this is one important factor in its production.

One point I would like to emphasise is the diagnosis of an impending coronary thrombosis. The distinction between ordinary angina and cardiac infarction has been a great advance. In some cases of angina the condition is stationary or nearly so, this representing a fixed degree of atheromatous change in a coronary artery. In others, often when the anginal pain is only of

recent onset, the condition is obviously getting much worse, as shown by the attacks being much more frequent or much more easily provoked. In such cases the cause is often a coronary artery narrowed to such an extent that actual blockage of the artery is imminent—by thrombosis or by the atheromatous plaques themselves.

Another patient I want to speak about also had coronary thrombosis. I have no specimens from his case to show you, but the story is interesting in several ways, especially as he recovered from his first severe cardiac infarct and had also during his life made very good recoveries from two other very serious diseases.

When I first saw him, nearly five years ago, he was 62. When he was 35 he had tuberculosis, and said the diagnosis was confirmed at the Brompton Hospital by the finding of tubercle bacilli in his sputum. Sanatorium treatment was advised, but he said he could not afford it, and carried on his ordinary work as a curate; he gradually made an uninterrupted recovery and never seems to have had any trouble with his chest since. I do not suggest, of course, that all your cases of tuberculosis will be as successful if treated in this way, but it emphasises one truth in regard to tubercle, namely, that the mental attitude of the patient towards his illness is very important, and if he faces it with courage he is doing his best towards recovery. The patient who says he is better simply because he will not face the facts is not taking up a courageous attitude, but the reverse; and such patients often go downhill rapidly. I remember a girl in Miriam Ward who said constantly that she was going hop-picking in the next few weeks, yet she was dying of tubercle rapidly; hers was a false optimism.

Our patient then was well for twelve years, when he had sarcoma of the left clavicle. He was operated upon at St. Mary's, and some months later had a second operation for what was regarded as a recurrence in the scar; he said that the diagnosis was confirmed by section. He made a good recovery again.

The third episode was five years before I saw him, and it is an extremely good description of coronary thrombosis. He got up one morning, feeling in his usual health, and was drying himself after his bath before going to take early morning Communion—he was a clergyman. Suddenly he felt he could not get his breath, and had a sense of terrible constriction across his chest. The pain became agonising, so that he thought he was dying, and to show how ill he was, the question of whether he could go to church and who was to take the Service never entered his head. His doctor arrived an hour later, and the pain was still extremely severe. He was given morphia and was treated with a rather longer period of rest than the first man had, namely, two weeks, and for some time afterwards he felt much more knocked up by his attack than the first man did.

The doctor who saw him the first morning rightly diagnosed it as a heart condition, but on the second day, when he found such a good recovery, withdrew that diagnosis and agreed with the patient that it must have been indigestion. I have seen several patients in whom coronary thrombosis was the original correct diagnosis, but in whom, owing to their improved condition the next day, it was thought to have been a case of undue alarm because there was little shortness of breath afterwards, and little if any continuation of anginal pain. This good recovery does not negative the diagnosis.

Again our patient made a good recovery from his attack, though he never felt quite the same after. All I know of him in the interval is that he was found to have a blood pressure of over 200, and he began to have a tight feeling across his chest again; this had been present three years before I saw him. The immediate reason he saw me was that while he was unveiling a Bermondsey War Memorial in 1930 he nearly collapsed, and had doubts of being able to finish the service. There was no severe pain, but there was collapse and a feeling of great anxiety.

I saw him a week after that, and in the interval he had taken things as easily as he could, resting most of the time. Yet I felt certain he had had another coronary thrombosis at that time. His blood pressure had fallen to 130, instead of 200 as it had been; the heart rate was over 150 and at times irregular, and that had been noticed for the last three or four days. So there had been a disturbance of rhythm following this thrombosis, which is not uncommon. There was considerable enlargement of his heart to both sides with a localised systolic murmur at the apex and a very abnormal electrocardiogram (Fig. 2), which showed changes of rhythm with paroxysms of tachycardia and right bundle branch block. He had six weeks in bed and the heart settled down, but the blood pressure remained low, and his electrocardiogram now showed right ventricular preponderance (Fig. 3.)

He was able to work for another two or three years; but his anginal pain was increasing. The last stage in the story of his life which had been so eventful from the medical point of view was revealed when one day recently I read in my evening paper under this headline, "Died in Surgery": "The Rev. ——, aged 66, a retired clergyman, collapsed and died in a doctor's

surgery at Brighton to-day." He had retired and had gone to live on the South Coast, and his death had been immediate, probably as a result of ventricular fibrillation due to another coronary thrombosis or to the scarring from the previous ones.

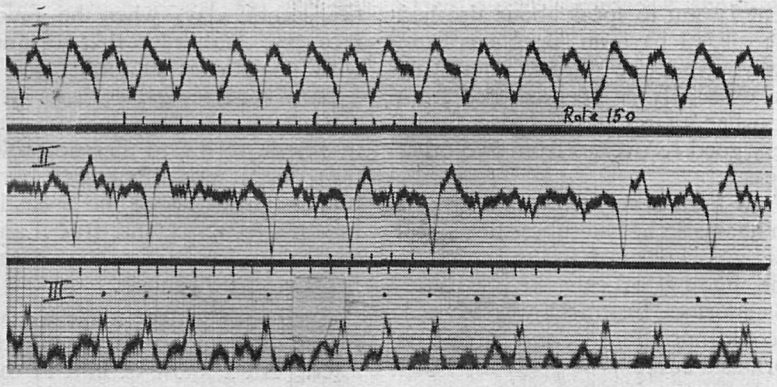


Fig. 2.

Electrocardiogram one week after his second coronary thrombosis. Lead I shows paroxysmal tachycardia at a rate of 150 with a defect of bundle branch conduction. Lead II shows many extrasystoles interrupting normal sinus rhythm at a rate of 112. Lead III shows normal beats interrupting paroxysmal tachycardia, or more likely varying bundle branch conduction.

Last night I was glancing at a book, "Clinical Aphorisms," by Dr. Gee, at one time senior physician at St. Bartholomew's Hospital. He starts by saying that the main difference between private and hospital practice is that the latter has the great advantage of one seeing what has happened at the autopsy, while the former has the advantage that one gets to know the patient and can see him over long periods. That applies to the general practitioner, and Dr. Gee evidently thought it applied to him as a consultant. But I cannot say I see as much of my private as of my hospital patients; the woman of whom I wish to speak next I have seen almost regularly once a fortnight since 1926, until her death last Christmas. We have, therefore, unusually full details of her life history during that period, and also of her pathological findings.

I ask you now to take your mind away from the coronary arteries to the picture of ordinary rheumatic heart disease; you may think this a more common one, from your hospital experience where valvular disease is so frequent, but in

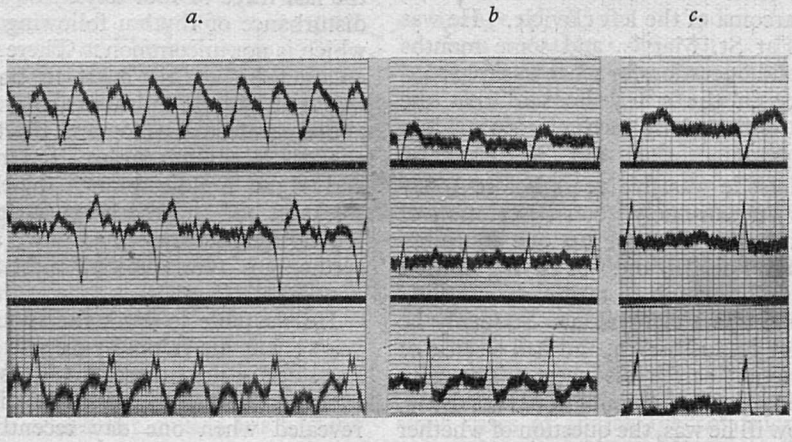


Fig. 3.

a. Electrocardiogram one week after coronary thrombosis (*see* Fig. 2). *b*. Seven weeks after. *c*. Six months after the same coronary thrombosis.

practice outside you will find it is relatively uncommon compared to non-valvular disease.

This lady was 35 when I saw her in 1926. She had had diphtheria when five years of age, and after this had some dyspnœa and palpitation and was told her heart was affected; this was attributed to the diphtheria, but mitral stenosis, from which she suffered, is never caused in this way, and it seemed to me to be more significant that between 14 and 21 she attended St. Thomas's Hospital with a diagnosis of debility and anæmia, which frequently represents subacute rheumatism. The patient who gets a frank attack of rheumatic fever is sometimes more fortunate in that there is the proper treatment and rest, which may prevent more than relatively slight damage to the heart. The patient who does not get much joint rheumatism often gets a good deal of smouldering rheumatic carditis. From 21 to 33 years of age she had little to report, and regarded herself as normal, and she married and had three children. Two years before I saw her she had her first real trouble, a rather mysterious illness for which she was in a local hospital (1925). Her main disability was pain in the back and a difficulty in standing upright, of rather sudden onset. Lumbar puncture was done, but nothing abnormal was found. Mitral stenosis was diagnosed, though not much importance was attributed to it, and she was regarded as neurotic. Possibly she had an embolism which affected some of the muscles of her back, and, if so, it was the first manifestation of her heart condition.

Some time between then and the date of my seeing her, her heart started fibrillating, and she came up as a case of congestive failure, with mitral stenosis, an enlarged liver, œdema of the legs and crepitations in the lungs (July, 1927). She was admitted to Guy's Hospital and treated with digitalis, and the condition was fairly satisfactorily controlled; I say "fairly" because, within three days of her discharge, she was readmitted to hospital (September, 1927), though with a different symptom, namely, acute precordial pain. And though we have got the advantage of a post-mortem examination in her case, there is still difficulty in deciding what her first breakdown was and why she had this severe pain. It was severe enough to justify her being given $\frac{1}{2}$ to $\frac{3}{4}$ gr. of morphia for the first three weeks, and for another three weeks $\frac{1}{4}$ to $\frac{1}{2}$ gr. Her temperature was about 101 during the first five days, her white count rose to 12,000, and there was a doubtful pericardial rub. The diagnosis was coronary thrombosis, but I did not think this likely. It is uncommon for the pain of that to last longer than 48 hours, and, if it does, the patient almost certainly dies. I have never seen anyone who has recovered so well after having severe pain over four weeks, and I have not seen anyone with mitral stenosis and fibrillation with a coronary thrombosis, though cases of cardiac infarction following an embolism have occasionally been reported.

Taking all these together, we can say the diagnosis was probably wrong. The only suggestion I had to substitute for it was that she had pericarditis during that period. There was the temperature and one day a doubtful pericardial rub was heard, but it is very unlikely that a patient with pericarditis would have pain for so long without the physical signs being more obvious. The autopsy did not reveal any gross pericardial changes, or any evidence of an old cardiac infarct. Possibly she had an infarct due to an embolism in the coronary arteries and made such a good recovery that it could not be detected when she died seven years later. It does not seem likely that the old pleural adhesions which were found could have produced such severe pain. From my knowledge of her since I am sure that there was some very real cause, as she was a woman who could put up with a good deal without complaining.

When the pain had settled down she gradually improved, and responded so well to digitalis treatment that after two months she was advised to have quinidine (December, 1927). Probably that decision would not be made now, with a greater knowledge of quinidine; her heart was too big for it to be successful for long and the risks were too great. But she did satisfactorily and normal rhythm was restored when the dose of quinidine had been gradually increased to 28 grains a day. She continued to take 5 grains of quinidine twice a day and normal rhythm was maintained for 13 months, which is as long as you can expect in a patient who had such a large heart; that is the main argument against using quinidine in such cases. Fig. 4 shows her electrocardiogram before and after the restoration of normal rhythm. The enormous P waves could hardly occur with anything except mitral stenosis.

In her case it certainly helped her greatly, for before she came to hospital she had felt too tired to do anything almost as soon as she got up, but now felt quite different and was able to carry on her household duties slowly till the evening. Presumably as a result of her attack of severe pain she still had at times a large area of cutaneous hyperæsthesia starting just below the left clavicle and passing down almost to the epigastric angle, bounded in front and behind by the mid-line and passing down to the thumb and radial side of th forearm (January, 1928).

In December, 1928, she had a paroxysm of auricular fibrillation which lasted four hours. Quinidine was increased to 5 grains t.i.d., but two months later fibrillation returned and became established. She noticed a sudden onset of palpitation on the way home and a stifling feeling, and after this became very ill. When I saw her her heart rate was 168 and quite irregular, and she was developing œdema of her feet. She was again admitted to hospital, then and subsequently her heart has been controlled with digitalis, generally with Nativelle's digitalin 1/600th gr. three times a day. There is another patient whom I often think of with her, for both had quinidine about the same time, and both have attended out-patients regularly since. The other rarely had more than two tablets a day, and often one tablet only controlled her heart rate. This is not evidence of her heart being better for so much depends on the ability of the kidneys to excrete digitalis.

In July, 1929, she had an hæmoptysis and pain in the side of the chest, which was certainly due to a pulmonary embolism. In January, 1930, she had sudden pain in the left foot; it went very white and cold and remained so for some hours, and a small black area appeared at the site afterwards, covering the fourth and fifth toes. She had a good deal of pain in it for some days. I thought it was a small embolism of her foot. A year later she had sudden severe pain in the left foot while out walking, which also I thought was due to embolism, but with it she noticed no change of colour.

About this time she had amenorrhœa for four months and wondered if she were pregnant. I thought it unlikely, as a patient with auricular fibrillation tending to congestive failure rarely does become pregnant—a very fortunate thing considering how disastrous the association of pregnancy and fibrillation is. I sent her to a birth control clinic to make doubly sure that she should not become pregnant in the future, and her subsequent remark at Out-Patients shows the difficulties there are to be countered with in that direction: "It was very kind of you to send me, doctor; it may be all right for you, but I did not like the idea of what they suggested."

The next three years (1931-33) were uneventful, though on one occasion when she came to hospital she said she had not been feeling as well as usual, not having taken the tablets regularly, and that she had therefore taken 12 tablets at once, which is, of course, a considerable dose. However, she felt very much better for it; I only approve of her action to this small extent, that I think every patient who has fibrillation should be taught a great deal about digitalis. Most of the sensible ones become very good judges as to when they want more or less, and I do not think it presumptuous on their part to suggest they are having too much digitalis or too little. You are hoping, in many of the cases, that you will keep the patient going for ten years or more, and their whole lives depend on the right control with digitalis. A change is needed from time to time according to the condition of the heart, and though patients can often get this adjustment carried out by the doctor, they cannot always do so, and so it is a great advantage to them to be able to help themselves.

Finally, in November, 1934, she had a left-sided hemiplegia due to a cerebral embolism and was

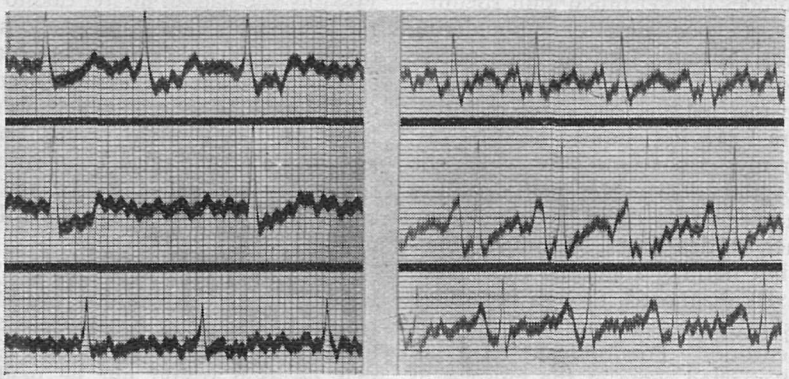


Fig. 4.

a. Electrocardiogram showing auricular fibrillation. *b.* After the restoration of normal rhythm. The very large P waves make the diagnosis of mitral stenosis almost certain.

admitted to hospital on the third day, still with very little power in her left side. She was, however, making a good recovery and was allowed up after three weeks, when unfortunately further emboli were detached and lodged in the right radial artery and at the bifurcation of the abdominal aorta. She died after eighteen hours, eight years after the onset of auricular fibrillation.

The notes of the autopsy were as follows, and the specimens from this and from the first case have been preserved in the Gordon Museum, though they have not yet been given permanent numbers.

The body was that of a heavily built, obese female. The left foot was dry and shrivelled, and the left leg from the ankle upwards was swollen, purple in colour, and gangrenous as far as the left Poupart's ligament. The right leg was normal. The right hand and forearm were swollen, purple in colour, and gangrenous as far as the elbow joint.

The brain looked normal externally, and after fixation, careful section showed no abnormality of the brain tissue or vessels. (This is surprising in view of the clear history of a recent cerebral embolism.)

Both pleuræ had dense adhesions at the bases, the right showing recent fibrinous pleurisy as well. Both lungs were bulky, heavy and tinged, and the right lower lobe was consolidated. On section there was a large recent infarct under the recent pleurisy, measuring 6 by 4 cm. The infarct was red, raised and solid, and the pulmonary artery to this lobe contained recent ante-mortem thrombus. Otherwise the lungs were only congested and slightly œdematous.

The pericardium showed a slight excess of clear fluid. The heart was greatly enlarged to the right and to the left. The right auricle was dilated and the tricuspid valve admitted four fingers. The right ventricle was dilated and moderately hypertrophied. The left auricle was dilated and contained ante-mortem clot adherent to its appendage. The mitral valve showed stenosis of the button-hole type, admitting the tip of one finger only. The valve cusps were thrombosed and shortened, and the chordæ tendinæ also showed fibrosis. There were no recent vegetations. The muscle of the left ventricle was slightly hypertrophied and pale and flabby. The coronary vessels were healthy and there was no fibrosis. The aortic valve showed slight thrombosis and the first part of the aorta was normal.

The right radial artery, 15 cm. from the mid-clavicular point, showed ante-mortem thrombus for 5 cm. to the ante-cubital fossa. The abdominal aorta was normal up to 5 cm. from the bifurcation, where an ante-mortem thrombus, which was about 8 cm. in length and not adherent to the vessel wall, straddled the bifurcation, occluding the left common iliac completely and the right partially. The left common iliac showed ante-mortem thrombosis down to the left femoral.

The liver was enlarged (1,800 grms.) and showed early nutmeg changes. Except for some 3 inches of ileum, 2 feet from the ileo-cæcal valve, which was extremely congested and becoming necrotic owing to a mesenteric thrombosis (? embolic), the rest of the alimentary tract was normal.

The spleen was small with coarse irregular scarring at the upper pole and with recent infarction. The left kidney showed irregular scarring in its upper half from old infarction; the right kidney showed old scars and one large recent hæmorrhagic infarct.

It is, therefore, a very good picture of most of the complications which you find in association with mitral stenosis and congestive heart failure, where one of the several emboli from which she had suffered was the cause of death. From her story one can fit in many of the occasions when the other emboli took place.

A Case of Rat-Bite Fever

By E. Clayton-Jones, M.B., B.Ch.

THE number of diseases which the wretched attendant physician can guarantee to check in the course of a few hours is still small enough to make it worth while to recognise promptly those which do occur. There may be an excuse, therefore, for recording a case of rat-bite fever, which is one of these delightful complaints. This was a case in which there was no history of rat-bite, but which ran a very typical course and, when the diagnosis was at length made, was cured in a most dramatic and pleasing manner. I hope those who read this will not need to wait six weeks before precipitating this happy result.

Mr. C., aged 58, is a stolid Kent farmer who boasted that he had not been laid up for nearly 50 years. He had osteomyelitis of his left femur at the age of eight years, which left scars over the middle and lower thirds of the bone. Otherwise he had suffered only from a recurrent winter cough.

On September 12th, 1935, he sent for me and complained of swelling of his left index finger. He told me that two or three weeks previously he

had struck his finger with a hammer, not breaking the skin. A black spot the size of a pea had appeared subsequently on the back of the finger; the spot had faded in a few days and had been replaced by a red ring around its site. The redness had spread slowly and the finger had become swollen and stiff. There had been no pain, and he had continued at work without difficulty.

When I examined him I found that there was a moderate degree of swelling of the proximal phalanx of the index finger, extending over the metacarpo-phalangeal joint, the skin in the swollen area showing a purple discoloration. There was no tenderness or pain on movement. There was marked lymphangitis extending up the forearm and inner side of the upper arm to a swollen and slightly tender gland in the axilla. His temperature was normal. I advised hot fomentations and a sling.

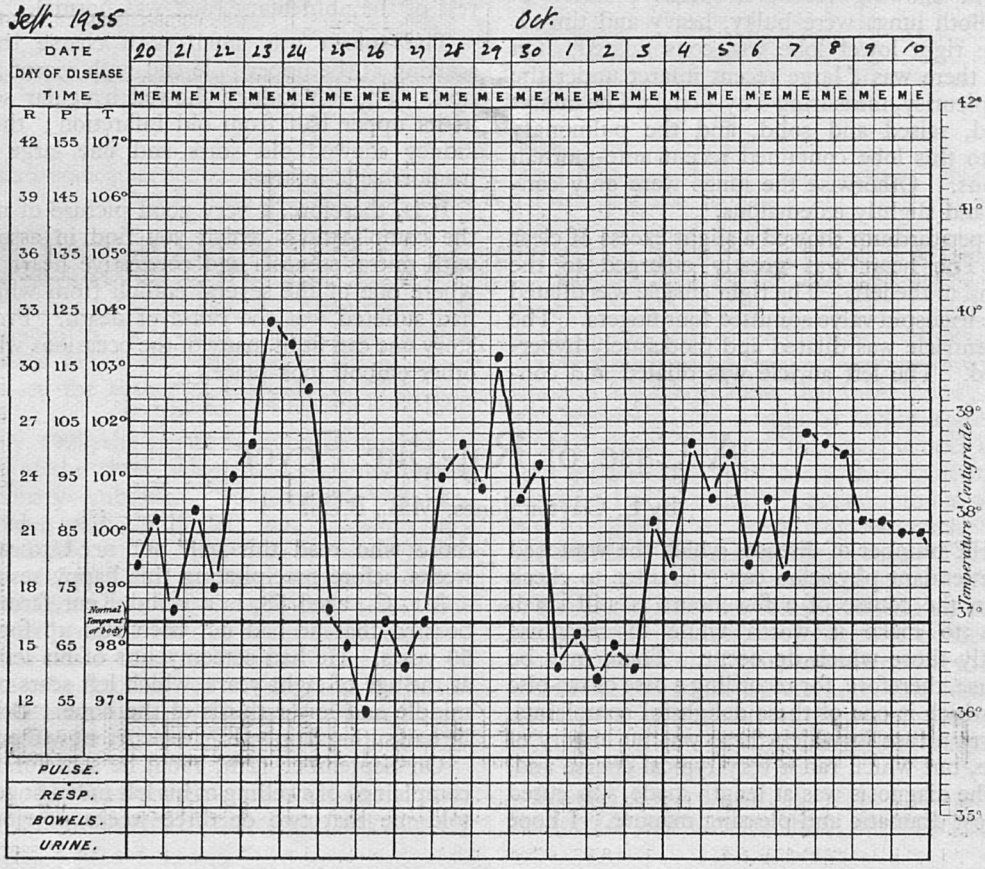
On September 14th there was no change, and my partner and I gave him evipan and made an incision into the swollen area of the phalanx. We obtained no pus. The finger was then fomented and the arm rested, and we hoped for rapid recovery.

During the next few days, although the finger slowly subsided, the lymphangitis became more marked, and a circular red patch about an inch across appeared on the forearm on one of the red lines.

On September 20th, Mr. C. drew my attention to two red patches which had appeared that day on his left leg. These were purely erythematous circular areas the size of a five-shilling piece on the inner aspect of the left leg immediately above the ankle. They were not painful or tender, and faded on pressure. His temperature was 99.4, and I ordered him to bed. Probably the diagnosis could have been made at this time, but no thought of it crossed my mind.

His temperature rose steadily in the next few days, and he complained of stiffness of the back and thighs and of some dry cough. He was very slightly cyanosed, but otherwise neither looked nor felt particularly ill. The fauces were injected, but there were no signs in the chest. The spleen was not palpable.

On September 23rd, when his temperature reached 103.8, his pulse was 116 and respirations 30. Next day the termperature began to fall, and on the following day reached normal. The spots



faded to a greyish-purple, the cough was less, and he felt almost well. There were three days of this improvement, during which the incision in the finger finally healed, the lymphangitis remaining unchanged.

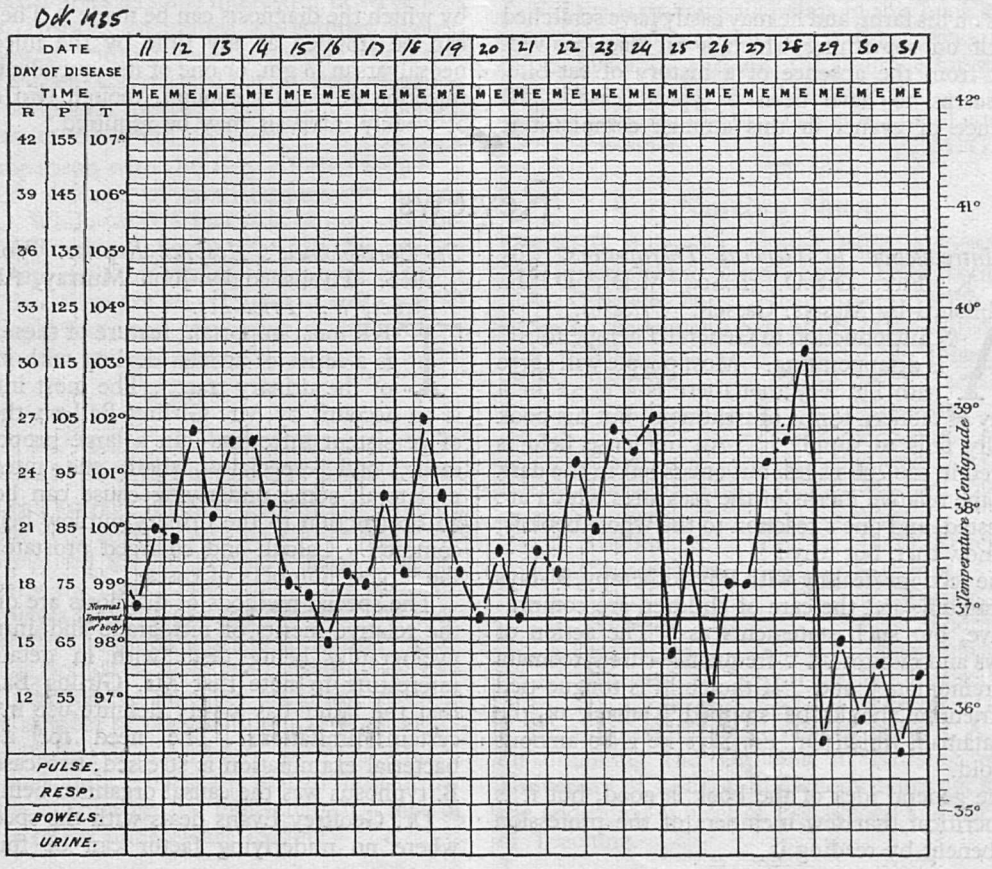
On September 28th the temperature rose again, the spots on the left leg again became red, and a hard, slightly tender mass the size of a walnut could be felt in the muscles of the left calf. There were three days' pyrexia and then a further $2\frac{1}{2}$ days of normal temperature, with fading of spots and of the original lymphangitis and disappearance of the mass in the calf. Then, with return of fever, new and similar erythematous patches appeared around the old osteomyelitis scars, in the right groin, below the thyroid cartilage, over the left scapula and on the right upper arm. On the third day these faded slightly and the temperature again fell, though this time it did not reach normal.

On October 7th there was a further rise and red rings appeared around all the now faded patches, these latter showing a definite desquamation.

On October 8th a blood culture was done, which was negative. On October 10th, 11th and 12th, I gave 10 c.c. of antistreptococcal serum without effect. On the latter date, with rise of temperature, the cough was more pronounced and the erythematous patches again became larger, fading in the centre.

There was a mild serum rash on October 18th, with further enlargement of the erythematous areas. By October 23rd these had so far increased in size as to cover the greater part of the left thigh and to form thin rings with grey desquamating centres on the other areas.

On October 25th it seemed clear that Mr. C. was not ill enough to have had a streptococcal or staphylococcal infection for five weeks, so blood was sent to the Clinical Research Association for agglutination with B. typhosus and paratyphosus, B. abortus and B. melitensis. A negative report on this was received on October 27th, on which day a new crop of spots appeared on the dorsum of Mr. C.'s right foot. A blood-film on that day showed: polymorphs, 92.7 per cent.; lymphocytes, 5.3 per cent.; eosinophils, .3 per cent.; basophils, .7 per cent.; large hyalines, 1.7 per cent. No spirilla were seen.



In view of the negative agglutination findings we were driven strongly to suspect that, in spite of the absence of history of rat or other animal bite, we were dealing with rat-bite fever. It was decided to give salvarsan as a therapeutic test.

On the morning of October 28th I gave .3 gm. of neosalvarsan from one of Bayer's most intriguing double ampoules, and in the evening Mr. C. for the first time felt ill. He vomited and complained of headache and much stiffness of his back and legs. He slept well, however, and next morning felt and looked greatly improved. His temperature was sub-normal, all stiffness had left him, his cough had gone and with it his cyanosis, the spots showed only as a grey stain, and he wanted to get up. He was, however, very markedly wasted—more so, I think, than one would have expected as he had taken his food well throughout. There was no further rise of temperature, and after a week he got up. His pulse rate continued to be in the neighbourhood of 100 per minute, and he was troubled by some œdema of the legs and feet. Otherwise there were no sequelæ.

One must assume that Mr. C. was infected in some second-hand manner. There were plenty of rats on his farm, and he may easily have scratched himself on something which a rat had gnawed. Apart from the absence of a history of rat-bite, this seems to have been a typical case. The sequence of events in this strange complaint is as follows: Following the bite of a rat, ferret or cat there is an interval of 2—6 weeks, during which the wound may heal completely. Then there is a flare up at the site of the bite, with local swelling and possibly ulceration with marked lymphangitis and adenitis. After a further interval of a few days the temperature rises fairly suddenly, usually with rigors, vomiting and general muscular pains. With the rise of temperature the lymphangitis may become more marked and the eruption appears on the limbs, trunk or face. Usually it is a purplish patchy erythema, as in Mr. C., but it may be morbilliform or papular. The temperature rises for three or four days and then falls rapidly to normal, remaining so for three to six days, to rise again for a further period. With the rise the skin eruption extends or becomes more marked, to fade in the intervals. The lymphangitis may behave in the same manner.

This relapsing fever may continue for months or even years, if untreated. Muscular pains and stiffness with wasting are usually present. During the pyrexial periods the causal organism, the spirillum minus, may be found in a blood film stained by Giemsa's method, though I could find none in Mr. C.'s. There is no agglutination test by which the diagnosis can be made. The process can be stopped at any time by the injection of neosalvarsan .3 gm. or one of its equivalents. One injection is usually enough, though two or more at weekly intervals may be required.

Reviews

An Introduction to General Therapeutics. By H. K. Fry, D.S.O., B.Sc., M.D., D.P.H. Published by Messrs. Cassell. *Price* 6*s.*

"An Introduction to General Therapeutics" is disappointing. Most people will agree with Dr. Fry that there is a need for a survey of modern forms of treatment, but his book signally fails to supply it. An immense field is covered in the 200 pages, but one is left in the dark as to the relative merits of the measures which are suggested, and one's reaction to the whole book is, "I know that, but why?"

The sections dealing with Physiotherapy, X-rays and radium, and the care of children are comprehensive, but such statements as "The action of X-rays and radium . . . frequently cure sarcomata or carcinomata" and "If the child is tongue-tied the frænum should be snipped" smack of the charlatanism which Dr. Fry says he is so anxious to avoid.

The general idea of the book is good, but it is so uncritical that few members of the profession will benefit by reading it.

St. Bartholomew's Hospital Reports. Vol. lxviii, 1935. Published by John Murray, Albemarle Street, W. *Price* 21*s.*

THE most important feature of these Reports is a series of articles dealing with infections of the urinary tract. The most interesting is an account by Mr. Girling Ball on the causes of persistent infection. In a large proportion of cases, and especially where the infection is unilateral, some underlying cause can be found, an obstruction to the urinary outflow being most common. Calculi and enlarged prostate provide the largest numbers of cases.

The special methods of diagnosis are discussed, the relative merits of retrograde and intravenous pyelography being dealt with in detail. It is interesting to note that Mr. Girling Ball thinks that the latter has a very definite use in spite of certain limitations. The need for a careful bacterial examination is stressed, two cases where B. typhosus was the causal organism being cited.

Dr. Geoffrey Evans deals with the special class where no underlying factor can be found. In

these patients there is often a history of excessive purging over a long period of time based on a faulty notion of bowel action. This results in a chronic catarrh of the bowel mucosa, which predisposes to bacillary absorption and urinary infection. There is often an associated neurasthenic element which Dr. Evans suggests should not be intensively treated until the general state of health has been improved.

There is a first-rate article by Dr. Garrod on Urinary Antiseptics; the only drug which stands the test of his searching inquiry is Hexamine. This, as is well known, must be supplemented by an acid urinary reaction. For this purpose acid sodium phosphate is of no use, for although it increases the titratable acidity of the urine, yet it does not sensibly increase the pH. Ammonium chloride should always be used.

A good article by Dr. Kersley on Fragilitas Ossium and Allied Conditions is another noteworthy feature of these Reports. This won the Horton Smith Prize at Cambridge in 1933 for the best M.D. thesis of the year. Dr. Kersley links up fragilitas ossium with otosclerosis, arachnodactylis and hyperlithuria.

Dr. Harris gives us some interesting observations on Pink Disease, including an autopsy report. This showed nothing macroscopically, but histologically there was marked patchy demyelination in the peripheral nerves and small round-cell infiltration in the brain.

In comparison with the Guy's Reports there is a marked absence of contributions by House Officers. While we feel that it is of great importance that Residents should have full opportunity to write up their interesting cases, yet often it appears that they are encouraged to write merely for writing's sake, and the result is often detrimental to the general standard of the Hospital Reports.

The Hair and Scalp. By AGNES SAVILLE, M.D. Published by Messrs. Faber & Co. *Price* 12*s.* 6*d.*

TO the average medical student Dr. Saville's book will appear from its nature to be too specialised for his perusal; this, however, is not really the case. It is true to say that skin diseases play a large part in any practice, and that, on the whole, the practitioner is lamentably ignorant of this branch of medicine; again in dermatological practice the hair and scalp are involved in a large number of the conditions to be treated.

Dr. Saville has dealt very fully with her subject, perhaps one's only criticism is that to most of her readers the chapter on the molecular structure of the hair is rather unnecessary reading.

The book is excellent on Alopecia and its causes, and the author tries to define clearly the differences between Pityriasis Simplex and Pityriasis Circinata, which still, unfortunately, is a subject of confusion to many. The question of hairfall is one of considerable importance, and is becoming increasingly common, despite the fact that with more care many cases could be prevented. Dr. Saville deals very adequately with the prophylaxis and treatment of all the common causes. On the vexed question of Alopecia Areata she does not bind herself to any definite theory of its causation, but seems rather to favour the view of Labousand that Alopecia Areata is cured when Nature decides it shall be cured and not before that time.

The last two chapters on Hair Dyes and Hirsuties are very instructive and worthy of careful study in view of their importance in general practice. Many cases of fur dermatitis must have been missed in the past, and the problem of dealing with hirsuties must have puzzled many doctors. Dr. Saville carefully studies the mental side in this condition; in fact, all through her book she never omits to consider the problem of diseases of the scalp from their local and general ill effects on the individual.

Not the least valuable points in this book are the stressing of salient features of a disease symptomatology in italics, and also the formulæ for various preparations at the end of the volume.

This book is to be recommended to all students and practitioners. A. M. G. C.

Nursing News

THE following Nurses were successful in passing the Final State Examination in October last. Their names have been added to the General part of the State Register :—

Miss Adlington.	Miss A. E. Jones.
,, Beamish.	,, M. F. Jackson.
,, Bentley.	,, Kennedy.
,, D. Baker.	,, A. Long.
,, Coombe.	,, Lowry.
,, Darwin.	,, Marson.
,, E. Evans.	,, Page.
,, Gellibrand.	,, D. G. Rogers.
,, M. Griffiths.	,, Sumpter.
,, Gordon.	,, M. Turner.
,, Gubbay.	,, S. A. Thomas.
,, Hawkings.	,, Thompson.
,, Harries.	,, Woolhouse.
,, G. C. Jones.	,, Wheeler.

We are pleased to congratulate Miss E. A. Opie on obtaining the Diploma in Nursing of the University of London in General Nursing, and in the additional subject of Psychology and Methods of Teaching.

Correspondence

Royal Medical Benevolent Fund

To the Editor of the GAZETTE

SIR,—A part of the work of the Royal Medical Benevolent Fund which has won the very special sympathy and support of many of your readers in previous years is the distribution of Christmas Gifts.

Undoubtedly it is due to the fact that this particular appeal touches the heart and kindly feelings of all as it comes at the season of goodfellowship.

Once again, I venture to make my appeal in your columns for donations either large or small, in order that the Fund may continue the distribution of 30*s.* each to all Beneficiaries.

I cannot but feel impressed when I read the many letters of thanks which are received from the recipients after Christmas Day. Clearly these letters are written from homes where no luxuries exist and where the greatest economy has to be studied; often from cheap lodgings or single bed-sitting rooms where lonely ones rejoice in the fact that they have not been forgotten. But all the letters contain expressions of the greatest gratitude and thanks to those who have made the gift possible.

I do not wish to stress unduly the needs and difficulties of our less fortunate medical brethren or of those who were once near and dear to them. But I do desire to assure your readers of the great work the Benevolent Fund is doing in bringing some happiness and comfort into the lives of many. This kindly work is being carried on thanks to the generous support which the Committee has received, but it can only be continued and increased if we still receive the support and sympathy of our professional colleagues.

Donations should be sent, and cheques made payable, to the Honorary Treasurer, Royal Medical Benevolent Fund, 11, Chandos Street, London, W.1, who will gratefully acknowledge them.

Yours, etc.,
THOS. BARLOW,
President.

11, Chandos Street,
Cavendish Square, W.1.

Funeral of Lady Perry

To the Editor of the GAZETTE

SIR,—I hope you may be good enough to give me so much space in your columns as to allow me to express, on behalf of my daughter and myself, our sincere thanks for the beautiful cross of flowers sent by "friends at Guy's" on the occasion of my wife's funeral last week at the Brighton Crematorium.

Yours, etc.,
E. C. PERRY.

Seighford,
25, Mill Road,
West Worthing.

Asthma Inhaler

To the Editor of the GAZETTE

SIR,—In a note of Major Collison's "Inhalation Therapy Technique" published in your issue of October 12th, your reviewer says: "At present there is, so far as we know, no inhaler in the Hospital which fulfils the requirements laid down by Major Collison." This sentence casts an unmerited slight either on the Hospital or on Major Collison. His book is an appreciation of the Apneu Inhaler, in which the author is interested, and this apparatus has been in use in the Hospital for several years. It was demonstrated at one of Dr. Hurst's Combined Rounds 18 months ago, when its advantages and also certain dangers connected with its use in asthma were pointed out. This is not the only apparatus which has been used in the wards to deliver a finely divided oily suspension for inhalation, and tests have shown that it is possible to produce an even finer suspension of particles without complicated machinery.

Yours, etc.,
GEOFFREY MARSHALL.

Guy's Hospital,
S.E.1.

To the Editor of the GAZETTE

SIR,—Dr. Marshall is quite right and I am wrong. There is in the Hospital one apparatus which "fulfils the requirements laid down by Major Collison." Curiously enough, this has a permanent home in the Massage Department, and is rarely, if ever, used in the treatment of asthma in the wards.

Major Collison in his book lays stress not so much on the size of the droplets delivered as on the importance of a bag. His reasons for so stressing the importance of this structure will be well known to Dr. Marshall and to all others who have studied his book with the attention it deserves. At present asthmatic attacks are treated in the wards by an apparatus which, however finely divided the particles it delivers, is bagless, and therefore either wasteful or ineffective.

Dr. Marshall also claims that this apparatus is capable of producing a fine spray of particles "without complicated machinery"—surely an unjust reflection on such a simple piece of mechanism as the Collison Inhaler.

Yours, etc.,

C. A. LILLICRAP.

Guy's Hospital,
S.E.1.

Emil and Kate Behnke

To the Editor of the GAZETTE

SIR,—I am writing a life of my parents, Emil and Kate Behnke, whose research into vocal physiology and subsequent work in the scientific training of the voice, and treatment of defects of speech, met with such cordial appreciation from, and close co-operation with, members of the medical profession, amongst whom they counted so many warm friends. If any of these should have in their possession letters or information which they would allow me to incorporate in the biography I should be grateful for the loan of them. Every care would be taken of them, and they would be returned in due course to the owners.

Yours, etc.,

KATE EMIL BEHNKE.

39, Earl's Court Square,
S.W.5.

Sport

Rugby

Guy's v. London University

AT Honor Oak Park on November 20th the Hospital were well and deservedly beaten by London University by 2 goals, a dropped goal and a try (17 points) to a penalty goal (3 points). It is true that the Hospital had practically a reserve back division out, but the forwards were practically the same pack that held Rosslyn Park so decisively on the previous Saturday. Against London University, however, they were scarcely recognisable, so lethargic and lifeless was their play. There were two exceptions, Darke and Yerbury, both of whom worked hard throughout.

London University got the ball in three out of four of the tight scrums, while at the line-outs a tall and hefty bunch of forwards made the most of their chances and gave their backs many opportunities, of which excellent use was taken; indeed, considering the wretched weather conditions prevailing and the heavy ball, the University handled surprisingly well. Milne gave a sound display at full-back, kicking and fielding with accuracy, but the best player on the field was White, the stand-off half. His defensive kicking was admirable, while he also broke through on many occasions and was always dangerous when he had the ball. Of the visitors' forwards Wood, Allen and Wesley were prominent, though all did their share.

The University attacked from the outset, several good rushes by the forwards being well supported by judicious kicking by White and Milne. From a scrum thirty yards out White dropped a fine goal. A dash by Douglas took play to the other end, and, the visitors being penalised for offside, Kark kicked a goal.

White then started a movement which was continued by Pearce and Chandler, the last-named crossing far out. White converted from near the touchline. Five minutes later the same player was again prominent, and from his opening Allen scored near the corner flag. White again succeeded with a difficult kick. Guy's looked dangerous for a few moments, but finished weakly, and half-time arrived with the University leading by 14 points to 3.

The University forwards went away with a rush in the second half and Pepper dropped over for an unconverted try. They attacked for most of the half, but could not add to their score.

Guy's had bad luck when from the one really good movement by their backs Birks crossed the line, only to lose the ball before he could touch down.

Team.—C. Halamandres; D. M. Douglas, G. J. Rees, A. Birks, R. M. de Gregory; D. I. Chapman, I. McD. Stewart; C. S. Darke, M. R. Kark, P. Crampton, E. R. Davies, E. B. French, E. R. Yerbury, S. M. Whitteridge, E. C. Sharp.

Guy's v. Gloucester

GLOUCESTER visited Honor Oak Park on Saturday, November 23rd, and after an interesting game were successful by 3 placed goals and a try (18 points) to 2 penalty goals (6 points).

With Dick playing for Scotland against New Zealand, Guy's re-arranged their back division, but the experiment was not successful, and Birks found Brooks extremely difficult to hold.

Hopkins returned to the pack and hooked exceedingly well, whilst Stanyon-Jaques was at the top of his form and got through a tremendous amount of hard work, but found little support.

The Hospital started very promisingly, and for the first few minutes kept the visitors desperately defending their line. Several bouts of passing between the threes looked as though a score might result, but excellent tackling kept them out.

In their excitement to get the ball out of the danger zone, Gloucester gave away a penalty, and Kark made no mistake with the kick. Guy's attacked almost immediately, when Stanyon-Jaques intercepted and cut through with Hopkins in support, but, unfortunately, the latter knocked on when rounding the full-back.

Another three-quarter movement by Gloucester was cleverly anticipated by Wright, who intercepted, but a glorious tackle by Boughton saved a certain try.

Offside against the visitors gave Kark another opportunity, and he kicked a good goal from an awkward position.

Stung by this reverse, Gloucester warmed up to their task and their forwards stormed their way to Guy's 25. Following a five-yards' scrum, the ball was sent rapidly to Meadows, who cut through beautifully to score a try behind the posts, which Boughton converted.

Gloucester were now well together, and with the Hospital defence wavering, Brookes gave the visitors the lead when he punted over the line and just won the race for the touch-down. Again Boughton kicked the goal.

Near the interval another forward attack by Gloucester enabled Harris to cross for an unconverted try.

With a lead of seven points it looked as if the visitors were safe, but Guy's started the second half with tremendous enthusiasm, and a splendid bout of passing and a kick ahead resulted in Stanyon-Jaques touching down and Kark, with a splendid kick, added the goal points.

This revival on the part of the Hospital aroused the spectators, and the excitement was increased when De Gregory only just failed to reach the line.

However, Gloucester had a fine defence, and eventually they relieved the pressure when Brooks and Meadows got away in the centre and Gale, on the left wing, ran over in the corner. Boughton crowned a good afternoon's work by kicking a perfect goal from the touch-line.

Team.—C. Halamandres; D. M. Douglas, C. G. Wright, P. H. Birks, R. M. de Gregory; I. McD. Stewart, K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, P. H. Crampton, E. B. French, E. R. Davies, E. C. Sharp, R. O. Yerbury, S. M. Whitteridge.

Association

Guy's v. Casuals

THIS game, played on Wednesday, November 16th, was noticeable for the improvement made by the whole team, the improvement being most noticeable in the defence.

From the start of the game the Casuals were continually attacking, and it was not until after the first quarter of an hour that Guy's broke away and then, from a mix-up in front of goal, Groom scored. The halves then began to find their forwards better, the combination between Dorr and Lee being especially marked.

At the beginning of the second half the Casuals made the scores level, but a grand shot by Jones-Lewis restored the lead. Guy's then looked like increasing their lead, but a bad mistake by the defence allowed the Casuals to equalise, the final score being 2—2.

The Hospital are to be congratulated on a fine game, as the Casuals fielded a very strong side.

Team.—J. Colenbrander; C. Sharp, D. W. Drew; H. A. Lee, G. W. Dorr, J. A. Watts; H. Jones-Lewis, L. Lewis-James, W. A. Groom, G. James, R. W. Harvey.

Guy's v. Old Malvernians

ON Saturday, November 30th, Guy's had as their visitors the Old Malvernians, and the game resulted in a win for the Old Boys by 3 to 2.

In the opening stages, Guy's had the better of the exchanges, but were weak in finishing, partly due to the wingers being inclined to shoot rather than to centre. After ten minutes' play, the Malvernians broke away and their centre-forward, finding the Hospital backs playing square instead of covering themselves, ran through to secure a snap goal.

Guy's did not equalise until just after half-time, when a well-constructed movement initiated by Harvey and carried on by Sprigings resulted in James scoring, and a second goal, this time by Groom, put the Hospital ahead.

The Old Boys retaliated and soon drew level, and then scored the winning goal with the last kick of the game.

Lee, James and Harvey played well, and if Guy's had only maintained the form shown against the Casuals in the previous week they should have had a comfortable win.

Team.—J. Colenbrander; R. C. Jackson, D. W. Drew; J. A. E. Watts, G. W. Dorr, H. A. Lee; G. C. Sprigings, R. W. Harvey, W. A. Groom, G. James, H. Jones-Lewis.

Hockey

Guy's v. Royal Naval College, Greenwich

ON Wednesday, November 27th, the First Eleven suffered their second defeat of the season at Greenwich against the Royal Naval College.

The ground was very soft and rather uneven, and the Hospital team seemed entirely unable to get used to these conditions.

In the first half Guy's were playing slightly uphill, but, in spite of this, had rather the better of the game. The Royal Naval College scored first after a breakaway on their right wing.

Guy's retaliated, and E. J. F. Hinde scored by following up after he had had one shot saved by the goalkeeper. Soon afterwards J. B. Franklin added a second goal, a fine shot from the edge of the circle on the left wing.

The Royal Naval College then attacked strongly and levelled the scores at 2—2. Their forwards always appeared dangerous, especially in attacks from the right wing. Guy's, however, scored their third goal just before half-time, F. Butterfield sending in a hard shot which E. J. Martin touched on its way into the net.

With the advantage of the slope, Guy's hoped to consolidate their position in the second half. From the bully-off, however, the R.N.C. attacked vigorously, and with their halves backing up well, they confined play mainly to the Guy's half of the field. Clearances by the Guy's defence were almost invariably returned, and the Hospital forwards seldom looked dangerous.

Two goals were scored by the R.N.C., one of them an individual effort by their left half-back.

Compared with their opponents, the Guy's players seemed badly out of training. The R.N.C. fully deserved their success, and Guy's must improve considerably on this form if they wish to achieve the success of which they showed promise earlier in the season.

Result.—Guy's, 3; R.N.C., 4.

Team.—H. V. Brown; J. S. Astbury, R. G. Archer (Capt.); A. C. Greene, A. G. Richmond, C. F. Wright; J. B. Franklin, E. B. Rowe, E. J. Martin, E. J. F. Hinde, F. Butterfield.

Squash Racquets

Guy's v. Kensington Country Club

Result.—Guy's won 4—1.

H. G. N. Cooper beat C. G. Aslett, 1—9, 9—0, 9—1, 9—7.

C. A. Boucher beat T. D. Mitchell, 9—3, 1—9, 9—1, 3—9, 9—6.

M. A. Partridge beat E. Rathe, 9—2, 9—3, 7—9, 5—9, 9—3.

A. D. Willis beat M. Norton, 9—2, 9—2, 9—4.

P. W. Clarkson lost to J. G. Llewelyn, 9—5, 9—6, 8—10, 8—10, 8—10.

Guy's played King's Club, Richmond, on on Friday, November 8th, and lost by 1 match to 4.

The results were :—

C. A. Boucher beat C. Robinson, 1—9, 6—9, 9—0, 9—2, 9—2.

R. Gilbert-Harris lost to R. L. Tomlinson, 5—9, 2—9, 10—9, 9—4, 5—9.

B. W. P. Roberts lost to E. Everest, 2—9, 4—9, 10—8, 3—9.

P. H. Birks lost to B. Blundell, 9—6, 3—9, 3—9, 2—9.

H. C. Davis lost to R. A. P. Hogbin, 0—9, 0—9, 3—9.

In a squash match against the South Bucks Squash Racquets Club the Hospital won by by 5 matches to nil. The results were :—

C. A. Boucher beat M. J. Burn, 9—7, 9—6, 7—9, 9—7.

P. W. Clarkson beat P. Stanley, 10—8, 9—6, 10—8.

R. Gilbert-Harris beat G. W. Turner, 9—2, 9—0, 9—1.

B. W. P. Roberts beat A. J. May, 9—6, 9—4, 9—7.

H. C. Davis beat H. G. Barlow, 9—4, 10—8, 8—10, 9—3.

In a squash match against the Royal Naval College, Greenwich, the Hospital won by 5 matches to nil. The results were :—

M. A. Partridge beat J. Walsham, 9—1, 9—3, 9—5.

A. D. Willis beat H. B. Turner, 9—0, 10—8, 9—5.

R. Gilbert-Harris beat T. N. Catlow, 10—8, 8—10, 9—2, 9—5.

P. W. Clarkson beat P. Stacy, 9—5, 0—9, 10—8, 9—6.

C. G. Baker beat C. S. N. Tomlin, 2—9, 3—9, 9—7, 9—2, 9—4.

Guy's Hospital lost to New College in a match at Oxford on December 1st. The results were :

H. G. N. Cooper lost to M. MacLaren, 9—5, 3—9, 9—7, 6—9, 9—10.

M. A. Partridge beat J. G. Leach, 9—4, 5—9, 3—9, 9—7, 9—7.

P. W. Clarkson beat R. C. Brooke, 9—4, 0—9, 10—9, 9—3.

R. Gilbert-Harris lost to W. G. Lane, 7—9, 8—10, 7—9.

C. G. Baker lost to H. N. Dalrymple-Duncan, 3—9, 9—5, 6—9, 9—4, 3—9.

Boxing

THE Guy's team met London Hospital Boxing Club on Monday, December 2nd, at the London Hospital, and lost by 2 events to 5.

C. F. Ziervogel lost to Waterfall.

J. S. Crone lost to Craner.

J. S. F. Watson beat Mahon.

J. Wills lost to Durrell.

C. Halamandres beat Furnell.

A. Halamandres lost to Mahon.

H. Merrick lost to Arthures.

P. Fletcher boxed an exhibition bout.

C. F. Ziervogel lost by a narrow margin of points to Waterfall after a thrilling fight, and both men are to be congratulated on a splendid exhibition.

It was unfortunate that in his first appearance J. S. Crone should have met Craner, but he gave a grand display of courage before succumbing to a heavier and more experienced fighter.

J. S. F. Watson, who had had a gruelling contest at Oxford on the previous Saturday, gamely turned out again. Both he and his opponent gave the spectators an exciting three rounds, and Watson gained the verdict in a close finish.

J. Wills, who was also making a first appearance, did very well, and under Alf. Hewitt's further tuition he will make rapid progress.

C. Halamandres, the United Hospitals' champion, gave a perfect display of boxing in winning his bout, and Furnell is to be congratulated on his plucky display. He made spirited efforts to "connect" with his elusive opponent.

A Halamandres had the misfortune to take a heavy punch early on, and Mahon quickly finished the fight.

H. Merrick improves on each appearance and was unlucky not to get the decision. He is getting decidedly more aggressive and his footwork has improved.

P. Fletcher's opponent did not appear in the heavy-weight contest, so he boxed an exhibition three rounds with a City Police champion.

Both teams gave excellent performances, which the audience greatly appreciated. After the contests, the Guy's team were entertained to supper, and we are very grateful to our hosts for a most enjoyable evening.

The following were chosen to represent the United Hospitals B.C. against the Belsize B.C. :—P. J. Fletcher, A. Halamandres, C. Halamandres, H. Merrick.

The following have boxed for London University :—C. F. Ziervogel, J. S. F. Watson, H. Merrick.

Hospital Information, etc.

Notices

DIPLOMA IN PSYCHOLOGICAL MEDICINE

A Course of Lectures and Practical Instruction for the Diploma in Psychological Medicine will be held at the Maudsley Hospital from January to May, 1936. The detailed programme of the Course may be seen in the Medical School Office.

T. B. JOHNSTON,
Dean.

Papers by Guy's Men

Arthur F. Hurst. Prognosis of ulcerative colitis. *Lancet*, 1935, ii, 1194.

G. B. Dowling. Report of the Skin Department a St. Thomas's Hospital. *St. Thomas's Hospital Rep.* 1933, lvii, 224.

C. P. Symonds. Traumatic epilepsy. *Lancet*, 1935, ii, 1217.

Changes of Address

Dr. George McGregor, 51, Mill Road, Worthing, Sussex.

Dr. J. A. Ryle, from 13, Wimpole, Street, W.1., to 5, Herschel Road, Cambridge. Tel. : Cambridge 4801.

Appointment

G. P. B. Whitwell, appointed Medical Officer at the Rampton State Institution for Mental Defectives.

H. D. Hall, appointed Senior Dental Surgeon to the West Sussex County Council.

EDS. { P. W. C. / M. A. P.

GUY'S HOSPITAL GAZETTE

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NUFFIELD HOUSE OPENED

LORD NUFFIELD AS TREASURER

NUFFIELD HOUSE was opened by the Prince of Wales on Tuesday, December 10th. The Governors of the Hospital and members of the Staff entertained Lord Nuffield and representatives of the Press to luncheon in the Court Room. The Prince of Wales was received at three o'clock and conducted through the Colonnade and the Park to the Out-Patient Hall, where it had been decided to hold the ceremony for reasons of space and its accessibility to the new building.

A platform had been raised in the middle of the Hall, from which the Prince and other speakers delivered their addresses. The Treasurer, Mr. F. P. Whitbread, said :—

Your Royal Highness, may I, at the outset, express to you our great thanks and appreciation for the honour which you have done us in coming down this afternoon on this auspicious occasion? (Applause.) I may say we are always pleased and proud to see our President amongst us, and we realise the difficulty His Royal Highness must experience in finding time, in the midst of his multifarious duties, to be with us on such an occasion as this.

Perhaps I may be allowed to say a word or two about "Nuffield House," which has materialised through the great generosity—I might almost say the customary generosity—of Lord Nuffield—(Applause)—in finding the entire cost of construction and of equipment at his own charge. You cannot see Nuffield House at the moment, Ladies and Gentlemen (except with the eye of faith), because it is on the other side of that wall, but I may be allowed to say a word about its interior. It is so planned that every room in the building will get either the morning or the afternoon sun; and by putting the kitchens in the ground floor it has prevented the odour of cooking spreading to the main block, or the spread of the smell of anæsthetics. By an ingenious device of the Architect there is no possibility of patients on their way to or from the operating theatres being met by visitors or by other patients. I think the kitchen can bear favourable comparison with any other in London, and the operating theatres are equipped with all the latest requirements and are thoroughly sound.

Perhaps, as this is the last occasion on which I shall have the privilege of addressing you as Treasurer of the Hospital, I may take the occasion to say a word or two to you about my term of office. It has been a singularly happy one, owing to the support and confidence which I have received from all and sundry. And although I am relinquishing the office of Treasurer, I hope you will believe I am not giving up, in any degree, my interest in and affection for Guy's Hospital and all that is therein. (Applause.) I will only add that in retiring in these circumstances I am probably doing for Guy's Hospital a far, far better thing than I have ever been able to accomplish during my term of office. (Laughter.)

I now ask, Sir, if you will be good enough to declare Nuffield House open. (Applause.)

The Prince of Wales then spoke :—

Mr. Whitbread, Lord Nuffield, my Lords, Ladies and Gentlemen,—We are gathered here, in Guy's Hospital, to inaugurate a notable addition to this hospital, of which I have the honour to be President. For years past Guy's Hospital has provided a very limited number of beds for patients of moderate means, patients who could afford to pay something towards the cost of the care and special treatment, both medical and surgical, which a great institution like this can give. But for a long time we have experienced an ever-increasing though unsatisfied demand for pay-bed accommodation. It has been an obvious and an urgent need. To-day, thanks to the generosity

of Lord Nuffield, we have this up-to-date new Home for paying patients, of which he has contributed the entire cost of construction and equipment, amounting to over £70,000. (Loud applause.) I need not tell you, Lord Nuffield, that I myself and the Governors of this Hospital are deeply grateful to you for this fine addition which bears your name. If I may speak for a minute in another capacity, that of President of King Edward's Hospital Fund for London, it may interest you to know that the King's Fund has recorded its considered opinion that the provision of pay-beds has proved to be a very valuable addition to the voluntary hospital service of this great City, and that a material extension of this provision is urgently required to meet the existing demand. King Edward's Hospital Fund also believes that such an increase in the pay-bed movement, with due safeguards for the maintenance and extension of beds, would be an advantage to patients of all classes, to the Hospital, and to the voluntary system as a whole. Those of you who are interested to know more on this subject I would refer to the summary of the Report of the Paying Beds Committee which I appointed in 1927, and from which, as a matter of fact, I have been quoting. But I feel that I have said enough to assure you that King Edward's Hospital Fund fully endorses what has been done here.

We very cordially welcome Lord Nuffield as successor to to Mr. F. P. Whitbread, who has so ably filled the post of Treasurer for the last eleven years. It is impossible to exaggerate the good fortune of the Hospital in securing the services of Lord Nuffield, whose genius for *organisation is unsurpassed.*

In our next number we hope to publish an appreciation of the work of Mr. Whitbread.

Mr. Whitbread, who has been a very efficient Treasurer here for the past eleven years, has told you that he has, unfortunately, found it necessary to resign. The Governors have accepted his resignation with regret, and have placed on record their unanimous appreciation of his faithful and distinguished services to the Hospital. (Applause.) And with this tribute to Mr. Whitbread on behalf of the Governors I would like, as President, to associate myself most cordially.

On the other hand, Mr. Whitbread has also made mention of the fact—and it is good news which we can receive with pleasure—that in his place Lord Nuffield has consented to become Treasurer of the Hospital as from to-day. (Applause.) Having known Lord Nuffield and his generous character for a number of years now, I consider that this Hospital is extremely fortunate in having him as its Treasurer, and I can think of no more appropriate occasion for making this announcement, in assuring him of our deep appreciation and gratitude, and that of all who will benefit by his most munificent gift.

I now have the privilege of inaugurating Nuffield House to continue even further the great work that this Hospital has done for so many centuries. (Cheers.)

Lord Nuffield replied as follows :—

Your Royal Highness, my Lords, Ladies and Gentlemen, —I can only say that what has been done has been a pleasure to me, and I only hope it will be the means of alleviating the sufferings of many people who are not in a position to enter an ordinary hospital, nor in a position to go into a nursing home. I am hoping that this Institution will give them a chance of getting the treatment that they should be getting. Ladies and Gentlemen, I thank you and the Prince very much for all the kind things that have been said about me, and with that I will thank you for your kindly reception of me in this Hospital. (Applause.)

* * *

At the end of Lord Nuffield's speech the Prince of Wales was conducted to Nuffield House, where the Matron, the Sister in Charge (formerly Sister Bright), the architect (Mr. Walford), the consulting engineer (Mr. T. J. Kiernan), Mr. Robbins, the retiring Renter and Registrar, the foreman, and the Hospital Clerk of the Works Department were presented. While the visitors took tea in the Nurses' Home the Prince was shown over the building, and left at about quarter past four.

By courtesy of the "Planet News Ltd."

The Prince of Wales with Lord Nuffield and Mr. F. P. Whitbread, the late Treasurer.

Nuffield House was then open to inspection for visitors. For those who were unable to attend the ceremony and have not seen the building we append a photograph. The building is light red in colour. The metal frames of the windows are a light blue-grey and contrast not unpleasantly with the colour of the brickwork. The building faces south-east and north-west, and on the latter side are balconies running almost its whole length, giving the spectator an impression of looking at some vast liner from the dock below. The road

NUFFIELD HOUSE

along the Park in front of the Medical Block has been extended to the front door of the building, which is on the south-east side and facing the Dispensary.

The two wings that can be seen extending on either side of the ground floor contain the operating theatres on one side and the kitchens on the other.

The building inside contains on the ground floor two theatres, administrative offices and the kitchens, while the patients are housed on the four upper floors. The accommodation consists of twenty cubicles and fifty private rooms, all of which are so arranged that they get either the morning or the afternoon sun. Each cubicle has a separate window, solid partition walls extending to within two feet of the ceiling, and on the remaining side can be shut off from the outside world by curtains. These are arranged in sets of four with conveniently adjacent bathrooms. The private rooms vary in size, the largest being about 14 ft. by 10 ft. In each there is a fixed basin with hot and cold water ; the lights, apart from reading lamps, are let into the ceiling, and there are plugs for telephones, electric fires and wireless.

The floors of all rooms are parquet, and the colour scheme of green and cream, for which we are indebted to the Matron, is exceedingly good.

The whole of the roof, which is, of course, accessible by lift, is available as a roof garden for

patients, and the central part of it is enclosed as a sun lounge for convalescent patients.

The charges, which include maintenance, nursing and drugs, but are exclusive of personal laundry, are as follows :—

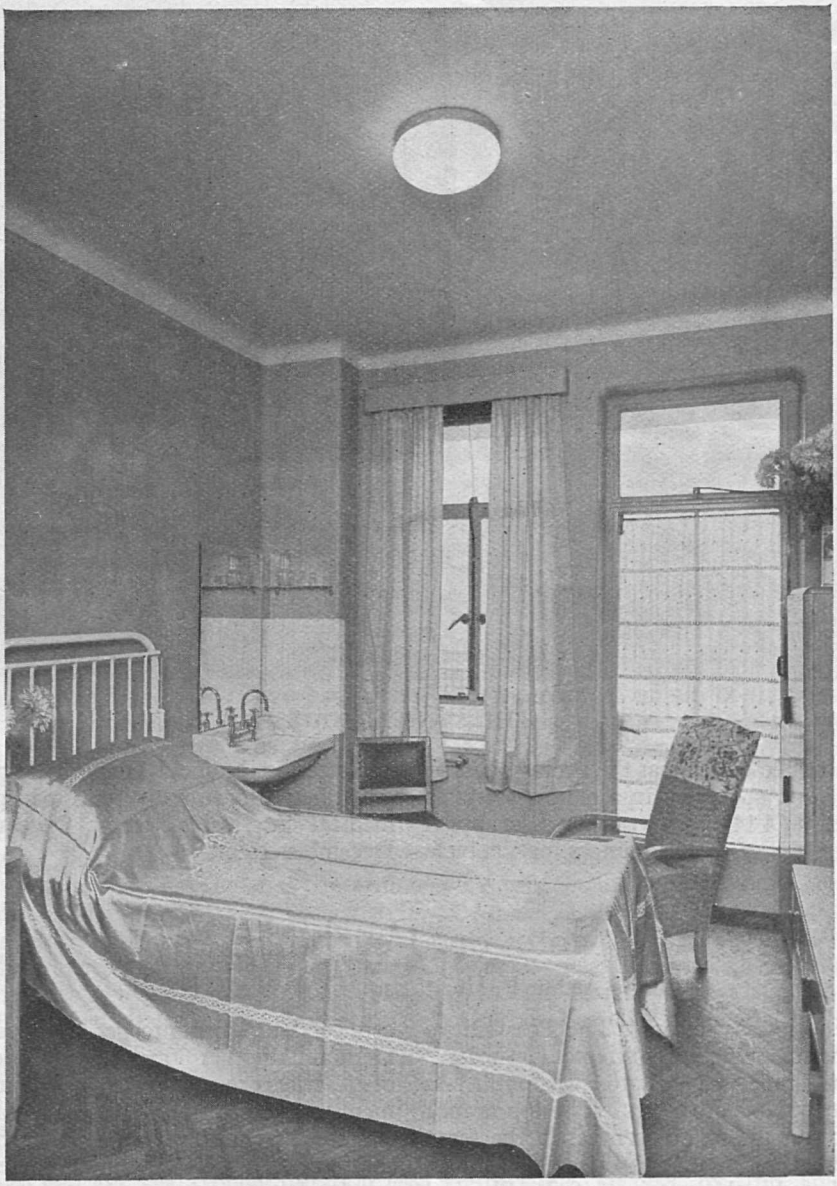
Cubicles : 5 guineas a week.

Private rooms : 7 guineas, 9 guineas and 10 guineas, according to size and situation.

Private room with bathroom : 12 guineas.

The cubicles are available only for patients whose total incomes fall within the following limits :—

Single persons, £350 per annum.

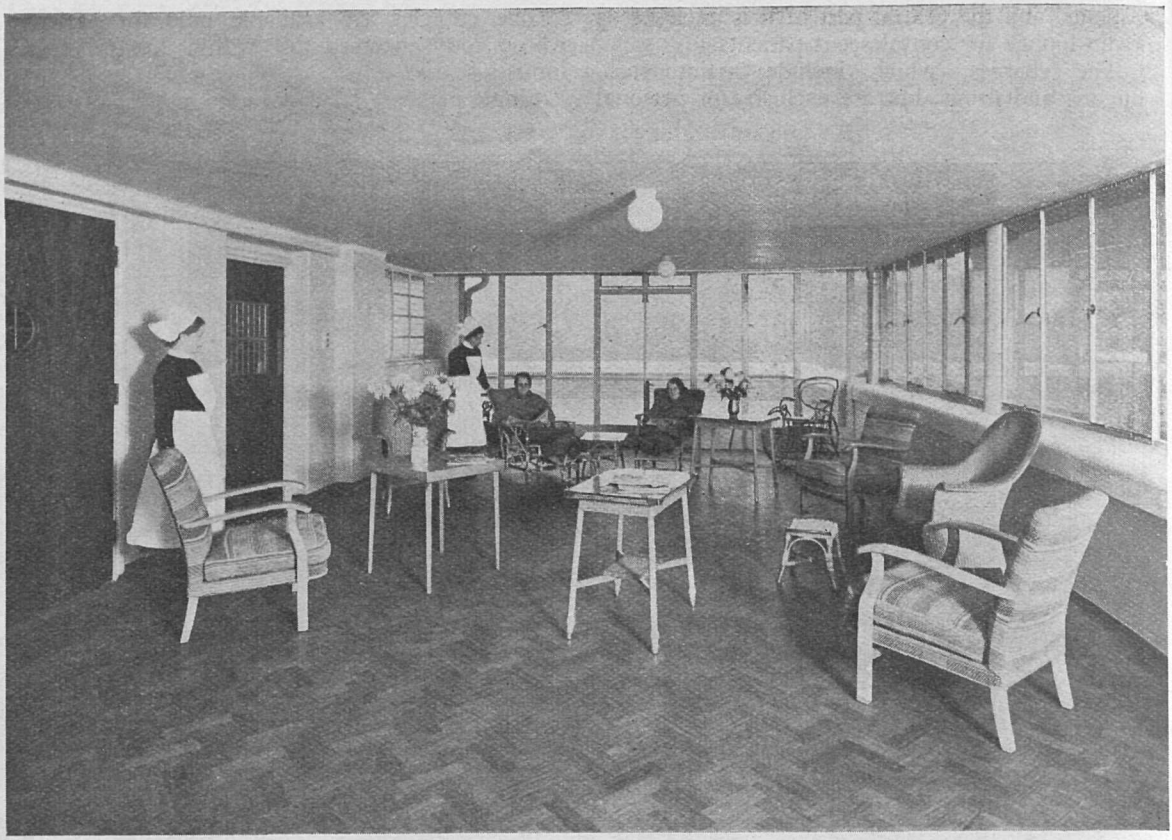


A SINGLE ROOM

Married persons, £450 per annum.

Married persons with children under 21, £550 per annum.

Private rooms are available without restriction.



THE SUN PARLOUR

When it is remembered that the average cost to the Hospital of an in-patient in a public ward has been estimated at £4 14*s.* 2*d.* a week, it will be appreciated that the charge of five guineas for a cubicle per week in Nuffield House is surprisingly low.

Nuffield House was open for inspection by the medical profession from December 10th to December 13th.

A Note on Psychotherapy

By Arthur F. Hurst, Esq., D.M., F.R.C.P.

AN interesting paper on "The Possibilities of Treatment in Early Mental Disorder," by Dr. Lindesay Neustatter was published in the *Gazette* for November 9th. The appearance of this paper and the announcement in the same number of the *Gazette* that a series of meetings is to be held under the auspices of the Physical Society for the discussion of psychological problems are welcome indications of the interest taken by the present generation of students in psychotherapy.

I am writing this note to draw attention to certain statements made by Dr. Neustatter with which I profoundly disagree. He writes that an expert psychotherapist can expect about 30 per cent. of his patients to get considerable improvement and another 30 per cent. moderate improvement, with presumably 40 per cent. no improvement or aggravation. He adds that in order to get these results with Freudian psycho-analysis the patient is seen five times a week for a period varying between six months and several years, and that the method he uses himself requires two or three visits a week for a period of three to six months.

Nobody is more suggestible than the psychotherapist. This was well illustrated by what happened during the war to that great neurologist, Babinski, who was probably the most successful psychotherapist of his day, and had had remarkable

success in the rapid cure of hysterical patients. He came to the conclusion that a certain group of contractures and paralyses following wounds to the soft parts were " reflex " in origin, and could therefore not be influenced by psychotherapy but might respond very slowly to physical treatment continued for months or years. Unfortunately the book in which he described these " reflex " disorders was translated into English. It had a deplorable effect both in France and England. The cases were really hysterical, and the contractures and paralyses could invariably be cured at a single sitting if sufficiently prolonged, provided that the medical officer realised that the condition was hysterical and was convinced that he could cure it. Many hundreds of cases of the kind were cured at a single sitting by the ten medical officers who worked with me in the Seale Hayne Hospital for functional nervous disorders during the last two years of the war. But Babinski, from whom I had learnt in 1907 the rapid method of treating hysterical symptoms, having come to the conclusion that the cases were not hysterical, had suggested to himself that they were not amenable to psychotherapy; consequently he could not cure them by psychotherapy. The numerous medical officers in France and England who read his book reacted to his suggestion and were equally unable to cure their patients.

Exactly the same thing is likely to happen to readers of Dr. Neustatter's paper. They will be unable to cure a psychoneurotic patient with less than two or three treatments a week for three to six months, and if they adopt Freud's methods they will have to see their patients five times a week for from six months to several years. Even then they will only cure 30 per cent. of their patients.

I believe that Dr. Neustatter's figures are most misleading. I have collected statistics concerning two small groups of patients I have seen myself, though I did not treat them, which are, however, large enough to show what psychotherapy can do when not hampered by any preconceived ideas as to the time required and the infrequency of cure. One group of thirty-five private patients suffering from psychoneuroses of more than average severity was referred by me to Dr. W. R. Reynell, who was one of the medical officers at Seale Hayne Hospital. The average number of treatments he gave them was ten and the average duration less than two months; 60 per cent. were relieved sufficiently to return to a normal life, 20 per cent. were much improved, 20 per cent. were slightly improved, and not one failed to show some improvement or was rendered worse in spite of treatment. Dr. Reynell tells me that the duration and the result of treatment of the thirty-five is representative of many hundreds of psychoneurotic patients who come to him for treatment. In a letter on the subject he writes: " On the whole I feel that Sir Henry Head put it very fairly when he said that in the treatment of psychoneuroses ' scratching the surface ' is all that is required in the majority of cases; ' ploughing the surface ' (superficial analysis) is desirable in a smaller number, and ' deep mining ' (psycho-analysis) may be necessary in a small minority. I have yet to be convinced that deep psycho-analysis ' cures ' many cases which cannot be successfully treated by much shorter methods of treatment."

My second group of cases consists of ten patients suffering from anorexia nervosa. They were all severe cases of long duration, which had completely failed to respond to treatment before they were admitted to New Lodge Clinic. One young man was actually moribund, as he had refused to take any food for so long that he would have died within a day or two had not rapid treatment been instituted at once; he was transferred to the Clinic from a nursing home, where he had been undergoing analytical treatment for several months. All these patients have been treated by Dr. J. F. Venables, another former Seale Hayne medical officer. They remained in the Clinic between a fortnight and four months, with an average of eight weeks. Active treatment rarely lasted more than three weeks, the additional period being required for the restoration of weight and strength to the emaciated and exhausted patients. Dr. Neustatter's minimum of three months was only once reached. Yet 100 per cent. were cured; they not only lost their symptoms at the time, leaving the Clinic physically and mentally well, but they have remained well, the earliest for over ten years.

The moral of all this is that the budding psychotherapist should regard the diagnosis of a psychoneurosis as an indication that complete recovery is attainable, and that he should try to cure his patient as quickly as possible without making his mind up beforehand that a course of treatment of a certain duration is essential for success.

Every medical student should read " The Common Neuroses " by Dr. T. A. Ross, who for thirteen years was in charge of the Cassel Hospital for Functional Nervous Disorders, where a very large number of patients were treated with remarkable success by the simpler forms of psychotherapy associated with the names of Dubois and Dejerine. He will realise, if he has not already done so from what he has seen in the general wards and out-patient departments of the Hospital, how common neuroses are, and how amenable many of them are to common-sense psychotherapy of a kind which every general practitioner should be capable of giving.

Ad Solem Orientem

By "Stanley"

THE voyage to India—and back—always seems to me to be different from all other voyages. Ships are full up one way and practically empty the other, according to the time of the year. In the Spring and early Summer the in-tide sets towards "Blighty," but in the Autumn it flows in the opposite direction. The passengers are almost entirely made up of people who pass to and fro on their lawful occasions as they go home periodically for a "spot of leave," or go back again to carry on their good work. I have often tried to decide whether the voyage out or the voyage home is the more cheery; but as I have never quite been able to do so there is probably not much in it. Coming home, everybody feels light-hearted and cheerful as a schoolboy coming home for the holidays; but, as a set-off, they are a little the worse for wear after three or four years of India, which tends to moderate any tendency to vociferous expressions of enthusiasm. On the other hand, although health and energy may have been renewed after a spell at home, there is always that Monday feeling, which seems to increase inversely as the square of the distance between the nose and the grindstone.

In a way, there is a resemblance between the passengers and season-ticket holders who come up to London Bridge and flow over the bridge to their work in the City. Each time you make the trip, you see familiar faces and know where they have been and where they are going. Sometimes there may be a little party of "globe-trotters" on board, but they are just as easily distinguished from the "reg'lars" as the stranger who muscles-in to a compartment in which two bridge fours are beginning their customary morning games. One is sure to meet a number of old friends. We found a first cousin whom we hadn't seen since he left Sandhurst over ten years ago. He was going out to the second battalion of his regiment on promotion. There were also three of my own old brother officers, not to mention many acquaintances.

As a rule, nobody seems to shake down properly until the Bay has been left well astern and we are reaching Marseilles. Long before we tie up to the buoy at Port Said we are on nodding terms with everybody and have split up into the usual little coteries. On this trip there was a very full ship, with about 1,400 passengers (including upwards of 300 troops), not reckoning four hundred and fifty of the crew. I have never been able to understand why it is that directly one goes aboard a ship one becomes a "soul." We carried 1,850 "souls."

I have often wondered what it must be like to go for a "pleasure cruise." The only things I know about them have been gathered from the wonderful accounts of people who have been; and—I have seen parties of them going ashore from their "luxury liners" at Port Said and Suez. Sometimes one or two of the pleasure cruising type breeze in as though by mistake, aboard an ordinary liner. They do not seem to mix.

On the way out I was called to see several interesting cases. There was a lady whose husband had an official job in India. She was returning after being at home for a year under treatment, and said she was no better for her stay. Her doctor at home thought she had better return before the English winter set in, as she had lived in India for fifteen years. She had a long letter from him to "the ship's doctor," which stated that she was suffering from cystitis; also a number of prescriptions all carefully numbered, with minute instructions to "the ship's doctor" as to the particular circumstances in which each was to be taken. We went very carefully into her history, and the main points were: (1) She had never at any time been troubled with frequent or painful micturition, nor had her urine been thick or offensive. (2) She complained chiefly of general abdominal discomfort rather than pain localised to any particular area. (3) She gave a vague history of "indigestion" and said that sometimes she turned from her food whilst at others she became simply ravenous. (4) Her breath was offensive, although her teeth were entirely artificial and were well kept. (5) She had lost over two stones in the past two years and had grown irritable and touchy. (6) She slept poorly and often woke up in the night with a feeling that she was going to be sick, but it usually passed off if she had a drink of water. On examination there were no abnormal physical signs, except rather exaggerated reflexes. Her urine was normal and contained neither pus, blood nor albumen. It was sugar-free.

I happened to have my microscope with me, and we examined the lady's blood. There were no parasites, but she had an eosinophilia of 7 per cent., which, considering her symptoms, rather suggested some form of intestinal helminthiasis. We accordingly microscoped her stools, and in nearly every field found ascaris eggs, either typical or decorticated. She was given an ounce

of castor oil the next morning with five grains of santonin at night, followed in the morning by another ounce of castor oil. The santonin was repeated on the following two nights, with a final dose of oil on the morning of the fourth day. The bag consisted of nine ascarides. There was a complete disappearance of all symptoms almost at once. The appetite returned, she began to sleep well, and at the end of a week—having put on five pounds in weight—said that she had not felt so well for two years. We found later that, although the lady's prescriptions bore an address in the neighbourhood of Cavendish Square, she had never had either a blood or a stool examination.

It is a golden rule when dealing with a patient who has lived in a hot country to inquire most meticulously into his places of residence (bearing in mind the geographical distribution of various tropical diseases) and previous medical history. Then, having made the usual physical examination, (1) search a couple of thin blood-films stained with Leishman for parasites (malaria, trypanosomes, blood-worms—which should also be sought for in thick, dehæmoglobinised films similarly stained—Leishman-Donovan bodies, spirilla, etc.), and (2) microscope the stools searching for helminthic ova, E. histolytica and its cysts, macrophage cells, Charcot-Leyden crystals and flagellates. Speaking of flagellates, there is a little rhyme which may help you to remember the number of flagella Lamblia has. It runs : " Mary had a little Lamblia, a merry little fella, and every time she went to stool he wagged his eight flagella." It will help you to distinguish between the free forms of E. coli and E. histolytica if you remember that the latter frequently contains ingested red cells, but the former never does. There are also morphological differences, especially in the nuclei ; but as both of them have a vesicular type of nucleus it is not always easy for the beginner to distinguish these differences. E. histolytica has a small *central* karyosome and fine chromatin granules on the nuclear membrane, whereas E. coli has a large *eccentrically* placed karyosome and the chromatin granules are much coarser. In the former there is a well-marked differentiation between the ectoplasm and the endoplasm, but not in the latter. It usually shows a large number of food-vacuoles containing bacteria or the cystic forms of other protozoa, such as those of E. histolytica, Lamblia (Giardia), etc. The most striking difference is in the movement, for whereas E. coli is slow and sluggish in its movements, E. histolytica shoots out pseudopodia rapidly in a manner which, when seen under the microscope, is most impressive.

There were one or two other cases which caused quite a thrill. Two were ordinary straightforward cases of acute appendicitis, and the third was one of acute intestinal obstruction. The latter man had been ill for four days, dosing himself with calomel (!) before he sought advice. He had an amazing amount of distension of his colon, which had to be punctured with a trocar and cannula before it was possible to do anything. It was then found that he had a volvulus of the sigmoid, and a considerable amount of peritonitis around it. Once the colon had been deflated, the volvulus was reduced without difficulty. He never rallied from the operation, although he regained consciousness, and the following day died suddenly, having become very cyanosed.

Coming home, we had an outbreak of enteric in the ship. The first case was a steward who had been found to have a temperature of 103. I saw him in consultation and suspected that he might be an ambulatory enteric, so suggested doing Marris's atropine test, which is a very great help when there is no laboratory available. I have had to cope with three epidemics " out in the blue," and in no single instance did it miss a case. It will not differentiate between the fevers of the enteric group, but that is a small matter compared with the importance of an early diagnosis. It is based upon the fact that in all conditions of health or disease an injection of atropine will accelerate the pulse rate, *except in fevers of the enteric group*, when it is either (*a*) slowed, (*b*) unaltered, or (*c*) increased by not more than 13 beats per minute. One of its great advantages is that it will give a perfectly reliable reading as early as the second day. The technique is as follows : (1) It must not be done within two hours of a meal. (2) With the patient resitng quietly in bed, take the pulse-rate for ten separate whole minutes The mean of these is the basic pulse rate. (3) Inject one thirty-third of a grain of atropine sulphate, and then (4) wait for exactly 25 minutes. (5) At the end of the 25 minutes take the pulse rate for five separate whole minutes, and compare the mean with basic pulse rate.

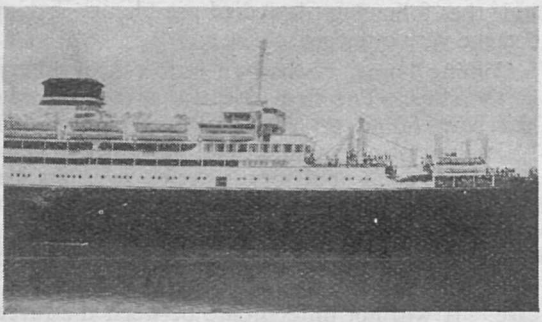
If the pulse rate is slowed, unchanged, or not increased more than *thirteen beats* per minute, the result is *positive*.

If it is increased by *fourteen beats* or over, the result is *negative*.

I used to feel that the nearer the increase to 13 per minute the more the liability to error ; but in practice it is not so. In the steward's case his basic pulse rate was 75—which was in itself suspicious with a temperature of 103 ; after injection it came down to 72. The next day he had rose-spots, thereby confirming suspicion as to its

ambulatory character. His later history proved the diagnosis. Two further cases occurred during the next week.

Both on the outward and homeward voyages we saw many signs of Italian activity in the Mediterranean, the Suez Canal and the Red Sea. So frequently did we pass Italian ships on their way out or home that it almost seemed as though all their available shipping had been mobilised for military purposes. Not only vessels of the ordinary troopship type, but everything from tramps to liners. The accompanying photograph shows a fairly close view of the *Saturnia*, a smaller sister



The " Saturnia "

of the *Rex*, and a crack liner. I estimated that she was carrying about four thousand troops. Anybody who has had experience of the effects of using a modern liner as a troopship will be able to understand the damage and deterioration they sustain. They are apt to become infested with vermin, and even repeated fumigation with hydrocyanic acid gas does not completely get rid of the bugs. There has been an outcry about our merchant ships having to compete with the subsidised shipping of other nations, but there is another side to the question. A government which subsidises its shipping expects something in return, namely the right to commandeer the subsidised ships in time of war. They are therefor taken off their normal dividend-earning work, with disastrous results to the shareholders. It may be cheaper for the government, but the company has to pay and so does the shareholder, by loss of income. All Italy's shipping has to pass through the Suez Canal and, quite apart from the tonnage dues, there is a *per capita* charge of between 8*s*. and 10*s*. on every person on board other than members of the crew. I returned in a 17,000-ton ship, which had less than 250 passengers on board, and the Canal Dues amounted to about £4,000.

At this stage of the war one begins to wonder at the continued despatch of troops from Italy. Is the army in Abyssinia being increased, or are the reinforcements required to replace casualties? This is exactly the kind of war in which the battle casualties will be outnumbered by those due to sickness, to the *x*-power. Even in April and May, when I was in Egypt, I saw ships go through which must have been carrying a very large number of sick—probably several thousands in the aggregate—before hostilities had actually commenced. The time is passing, and if some sort of a solution be not found, it is absolutely certain that Abyssinia cannot be conquered within the next three months. One can visualise them following the example of Signor Mussolini's illustrious predecessor, General Caius J. Cæsar, and retiring *in hibernis* until the rain stops.

We passed a trooper which appeared to have a number of large square, painted ports along her side, after the style of the old sailing ships. On examining her through the glasses these were seen to be huge portraits of Mussolini.

More than once one wondered what the King of Italy thinks about it all.

I am often consulted by people who want to go for a sea trip, or, as they usually put it, " a pleasure cruise." Personally, I have never been for a " pleasure cruise," nor do I want to go. But I have seen others who have, and I have seen them come back so utterly exhausted by the continuous " round of pleasure " that they have needed a fortnight's rest to recover.

I can imagine nothing more wearying than a fortnight on board a ship, the catering department of which arranges a succession of events for the delectation of their " guests " from morning to night, day after day, interspersed with " visits to places of interest " in the company of highly decorated females in beach pyjamas and their boy friends. I have met them during their trips ashore, and more than once they have made me go hot under the collar. If some of them only knew the outlook of the native they would understand the damage they do to British prestige by their behaviour and their beach pyjamas. Whoopee is all right in its proper place, if it is not overdone, but *not* before the African native or the Oriental, who is not educated up to it yet and is apt to misunderstand it. Perhaps I am handicapped by my Service training. Or is it merely *Anno Domini*?

The Editor will, at all times, be glad to consider articles or sketches, provided that they are accompanied by the writer's name and address, not necessarily for publication. Authors who desire reprints of their papers should make their own arrangements with the Printers when they return their proofs. All contributions to be addressed to *The Editor*, who does not accept responsibility for the views expressed by contributors.

Eugenics

A Paper read to the Physical Society on 28th November, 1935, by J. R. Forbes, Esq., M.B., B.S.

MR. CHAIRMAN and GENTLEMEN,—The word "Eugenics" is derived from the Greek εὐγενης, meaning "well-born." It was first used by Francis Galton, the founder of the science, in "Inquiries into Human Faculty," published in 1883. Eugenics is defined by Galton as "the science of improving stock, which is by no means confined to questions of judicious mating, but which, especially in the case of Man, takes cognizance of all influences that tend, in however remote a degree, to give to the more suitable races or strains of blood a better chance of prevailing speedily over the less suitable than they otherwise would have had."

It was not till nearly twenty years later, in 1901, when Galton gave the second Huxley lecture on "The possible improvement of the human breed under the existing conditions of law and sentiment," that academic interest was aroused in this new science. Once started, rapid progress was made. In 1904, Galton founded a Fellowship at London University for the study of "National Eugenics." The Eugenics Education Society was founded in this country in 1907, and the first International Eugenics Congress was held in London in 1912. After the Great War public interest began to be stimulated in this new science, and in 1931 Major Church introduced a Bill into Parliament under the ten-minute rule for the legalisation of voluntary sterilisation of mental defectives. The Bill was defeated, but in the next year the Minister of Health set up, on petition, a departmental committee under the chairmanship of Mr. L. G. Brock, to inquire into the value of voluntary sterilisation as a means of preventing mental deficiency and disorder. The unanimous report of this committee recommended the legalisation of such a measure, and the widespread, and on the whole sympathetic, publicity with which it was received gave a decided fillip to the Eugenic cause. As a result of the favourable findings of this impartial body, a Joint Committee on Voluntary Sterilisation, drawn from various societies interested in mental hygiene, was formed, and the committee has drafted a Sterilisation Bill, for which it is now engaged in seeking such public support as would justify the Government itself in introducing legislation. I do not think that the time can be long delayed when such support will be forthcoming. Whether it will be justified or not is a matter on which you will be able to form your own opinion at the end of this paper.

Galton considered that there were three stages to be passed through before eugenics could be considered as of national importance :—

(1.) It must be made familiar as an academic question.

(2.) It must be recognised as a subject whose practical development deserves serious consideration.

(3.) It must be introduced into the national conscience like a new religion.

Stage (2) has already been reached in this country, and an attempt made at Stage (3). That is to say, serious consideration, as exemplified by the work of the Brock Committee, has been given to at least one important and practical aspect of eugenics ; and the Joint Committee on Sterilisation is at the moment trying to introduce voluntary sterilisation into the public mind "like a new religion." In Germany to-day one might almost say that the third stage had been reached. But, unfortunately, "race hygiene," as eugenics is called in that country, has been so distorted by political and racial prejudice as to have become ridiculous. Sterilisation in Germany is legally compulsory in the case of certain mental disorders and defects. So far racial prejudice has not been strong enough to demand the compulsory sterilisation of its fancied enemies. But should such action ever be taken, the cause of rational eugenics in other countries—already damaged by German frightfulness in the name of "race hygiene"—must be done a grave disservice.

Eugenics implies the improvement of the human race by conscious effort on the part of its members. But what need is there for such effort? Racial improvement has gone on in the past, otherwise we should all still be savages. Why should it not continue in the future? These questions must be answered by the supporters of any system of eugenics before there can be any question of considering artificial means of improvement.

It is obvious that in an uncivilised state the need for eugenics does not exist. When the existence of the individual depends on his own physical condition and intelligence, only the fittest survive, and the weaker members of the community are weeded out. In other words, the operation of natural selection keeps up the physical and mental standard of the race. But with increasing civilisation man develops a social conscience, which expresses itself in a sympathy with weakness, in caring for those unable to look

after themselves, and for the diseased in body and mind. Moreover, the increase in medical skill and knowledge enables many of those who would otherwise die early to live and to reproduce their kind. Natural selection is therefore partially suspended, and those who believe in eugenics say that, in order further to improve the race and to prevent its deterioration, it is necessary to implement natural selection by conscious selection undertaken by man.

The effects of this failure of natural selection are admittedly not yet very obvious. We live under conditions of comparative ease and comfort, and it is probable that in the future, provided that another World War does not obliterate all but the sick and the senile from the face of the earth, the community will for a time continue to live under progressively more comfortable and hygienic conditions, and that its wealth will tend to increase as in the past. At first sight, this would not seem to indicate much racial deterioration. But increased wealth and greater comfort are not necessarily indications of improvement in the race itself. They are brought about mainly by new scientific discoveries, which are the work of a few gifted people. Indeed, increasing luxury may be masking the fact that the race is slowly, and almost imperceptibly, deteriorating. How are we to determine if this is indeed the case; whether we are, in fact, no better than, or worse than, our forefathers (meaning, of course, those ancestors who lived, let us say, within the last five hundred years; I should not think anyone would doubt that we are better than when we were a race of cave-dwellers)? We are, as a race, undoubtedly healthier. The death-rate has decreased enormously, and the expectation of life has steadily increased. But most, if not all, of the credit for this must be given to greater medical skill, better housing, better food, better labour conditions, etc. The standard of education of the community as a whole has improved, and so presumably we are more mentally able. But those classes which have always had the privilege of a good education, are they more mentally able than their forebears? Is the standard of mental capability of the aristocracy to-day any higher than it was in the sixteenth century? There is at least room for doubt. Even morally are we any better? Admittedly the poor and the unfortunate are better cared for, laws are more just, and there is more personal liberty (at least in this country). But can we really believe in the moral progress of a world that still contains gangsters, gunmen, Jew-baiters, newspaper lords and poison-gas experts?

But believers in eugenics go further. They assert that, whether or not the race has improved in the past, in the future it is going to deteriorate, and that deterioration has probably already started. This assertion is based on the concrete evidence of the differential birth-rate. It is well known that the birth-rate among the lower classes of society is very much greater than among the higher classes. Not only that, but the birth-rate among the more undesirable members of the lower classes is higher than it is among the more desirable members of those classes. True, the infantile death-rate is also higher among these undesirables, but even so there is a greater number of survivors who are offspring of bad types. And improved public health measures, with a consequent decrease in the infantile death-rate, are likely to increase the difference still further. One of the main reasons for a low birth-rate among desirable stocks is social ambition. Increased facilities for education and the growth of democracy encourage the better types in each social class to try to raise themselves into a higher class. The unskilled labourer becomes a skilled labourer, the skilled labourer an artisan, and so on. Once the higher status is obtained, there is the struggle to maintain it, and to bring up the children in a manner fitting to the new position, so that they may raise the family fortunes still higher. All this means saving money, and a small family, as it is usually impossible to educate more than one or two children properly. Meanwhile, the less able or frankly useless members of the community are left to breed like rabbits, and if they are unable to bring up their families properly, the State has to do it for them, which means more taxes on their more able countrymen. The tendency is, then, for large families among the less desirable members of the community and small families among the better types. This must mean, if there is anything at all in heredity, a gradual deterioration of the race. Supporters of eugenics answer the criticism that deterioration is not yet very apparent by pointing out that these changes are comparatively recent. A century ago there was very much less movement up and down between the social classes; the barriers between them were then so much harder to surmount. There was therefore little or no inducement among the better types to family limitation. In addition, the death-rate among the children of the poorer classes was very much higher. But the effects of this deterioration must be felt sooner or later, and a falling-off in our creature comforts, to say nothing of the higher things, will result. Then will the mischief be only too apparent.

Those who believe in eugenics, therefore, are influenced by three factors:—

1. By a belief in the powers of heredity.

2. By the knowledge that fertility is greatest among the less desirable members of the community.

3. By the belief that natural selection is largely suspended.

I do not think there can be much doubt that it is true that race-improvement is not likely to continue in the future as it did in the past. But is it possible to do anything about it? The eugenic expert is ready with his solution. The following measures are put forward as the means of arresting deterioration and of improving the race :—

1. The encouragement of breeding among good stocks.

2. The encouragement of selective mating.

3. Birth-control facilities made available to all.

4. Facilities for voluntary sterilisation, especially in the case of mental defect and disorder.

It must be emphasised that all the above measures are to be voluntary; whatever may be the practice in other countries, in England there is to be no question of compulsion, persuasion alone being relied upon to produce results.

The encouragement of breeding among good stocks is a measure with which no one could quarrel. Propaganda would be necessary; appeals made to duty, patriotism, etc. The idea being, in Galton's words, to introduce the eugenic ideal into the public mind "like a new religion," or a part of the moral code. Until such a stage is reached, it does not seem likely that the forces of ambition and social snobbery, and, in the case of women, of vanity, will be overthrown. Such a stage is at the moment very visionary, I am afraid. A more practicable measure would be the encouragement of families among suitable parents by means of financial subsidies. Heavy taxation would simultaneously be applied to bachelors and childless couples. It is obvious that considerable care and discrimination would have to be exercised in the allotment and control of such subsidies, and precautions taken against abuse of the system.

Subsidies would be alloted only to parents of sound stock. Allowances would have to be graded according to the social status of the family, for it is obvious that the allowance which would materially assist a bricklayer in bringing up his family would be of little use to an accountant. The system would be, in a way, an insurance against parenthood, premiums being paid by the childless and dividends drawn by the fruitful. Such a system would, of course, have to be combined with some form of birth restriction among the undesirable members of the community, otherwise the problem of over-population might rapidly become acute; and, in the absence of such birth control it might be that one could not expect to do more than preserve the race at the same cultural level. No improvement might occur.

The encouragement of selective mating is again an excellent theory, but it is doubtful whether it will ever be possible to influence to any extent the young in their choice of a mate by appeals to their patriotism. The experiment is being tried in Germany, but there compulsion is being brought to bear on recalcitrant Romeos. No question of compulsion enters into the eugenic measures proposed in this country. To a certain extent selective mating takes place naturally, in so far as an intelligent man is not likely to marry a feeble-minded woman. But mistakes will happen, and, I think, are likely to continue to happen in spite of all eugenic or other equally well-meant efforts to stop them. All intelligent and conscientious parents are eugenically minded, perhaps unconsciously, and it is a poor sort of paternity which is content to fold its hands and murmur, "Youth will be served," or some such cant, when it sees its offspring contracting an obviously undesirable alliance. Sexual attraction is a powerful force, but it is not all-important, as one might think from a perusal of the works of some of our so-called "advanced" schools of thought. It is time for a counter-reaction against the reaction against Victorian *mariages de convenance*, for it is this reaction which is mainly responsible for filling the divorce courts to-day. Youth must be encouraged to think clearly and eugenically.

Birth-control is, of course, a very vexed question, and one about which much balderdash has been said and written. Bishops and Sunday papers are probably the chief offenders in this respect. Most of the battle seems to rage around the moral and religious aspect of the question, which aspect does not concern this paper. From the practical eugenic point of view there is not much to be said in favour of birth-control methods, except that they do not require a surgical operation. It has been urged that they do not mean permanent sterility. But to achieve the ends of eugenics permanent sterility of undesirables is essential, as undesirability is not, according to eugenic teaching, a product of environment but of heredity, and therefore unalterable. The methods of birth control are complicated, unæsthetic, uncertain and expensive. It is even doubtful whether any method is entirely free from some harmful effect on one or both of the participants. But the most damaging criticism that can be made is that birth-control is, and will be, used by the wrong people. It is the healthy, desirable, socially ambitious people who practise birth-control methods. The undesirables are either too lazy or too incompetent to make proper use of them. Widespread knowledge and use of

birth-control methods would probably be, if anything, disadvantageous to the eugenic cause.

Voluntary sterilisation is, however, a measure which deserves, and recently has received, much more careful consideration. To most people the word "eugenics" immediately recalls voluntary sterilisation, so I intend to treat the subject in some detail. It is the ringleader of eugenic "prophylactic" measures, and one which, it is claimed, may do much in time to reduce mental deficiency and disorder, and with them many concomitant social evils, such as habitual immorality, drunkenness, unemployability, etc.,which are undoubtedly closely allied to mental deficiency. The objections to birth control listed above do not apply to voluntary sterilisation. Sterilisation does not interfere in any way with sexual life, nor are its effects psychologically harmful. After the cost of the operation, which it is intended shall, if necessary, be borne by the State, there is no further expense. The operation itself is trifling in the male, and even in the female is not very serious. Its effects are, of course, permanent, and therefore voluntary sterilisation is not a course to be embarked upon lightly. Its advocates are alive to this fact, and it is intended that safeguards, such as a qualified medical opinion, should be applied in order that young irresponsibles may not rush in to be sterilised when they find that Father has become Napoleon Buonaparte!

By the Brock Committee recommendation facilities for voluntary sterilisation are to be granted to the following:—

1. Mental defectives, or those who have suffered from mental disorders.
2. Those who are likely to transmit mental defect or disorders.
3. Those who suffer from, or are believed to be carriers of, grave physical disabilities which have been shown to be transmissible.

With regard to mental deficiency, it is naturally of the first importance to know what part heredity plays in its ætiology. Over this point a great controversy rages, and it must be admitted that a great deal of work requires to be done before it is made clear. It cannot be doubted that heredity is a potent factor. Numerous family trees have been compiled which are dreadful records of insanity, mental deficiency, epilepsy and moral depravity, and in which environment cannot possibly be held wholly to blame. Mental deficiency, from its definition, cannot be *produced* by environment. The deficiency exists *ab origine*. But environmental factors are certainly operative in bringing about the discovery and certification of defectives. For example, a slightly defective farm labourer may be unnoticed, or at the most considered a bit dull; but the same degree of mental deficiency in the son of a barrister would be at once noticed and commented upon. Again, our defective farm labourer was probably brought up in fairly decent surroundings, and finds no particular temptation to anti-social behaviour. But had he been reared in the London slums his defect would have made him the ready prey of depraving influences, with the consequence that he would very likely have come into collision with the law, when his sub-normality would have been discovered. Environment, therefore, is an important factor in the discovery of mental deficiency, which, from the eugenic point of view, is naturally most important. For, unless all the population is to be compulsority subjected to Binet-Simon tests, it would seem that an indefinitely large proportion of mental defectives will remain undiscovered, and be allowed to breed undisturbed. But even if all defectives were to be certified and persuaded to submit to sterilisation, mental deficiency would not by any means be stamped out. Unfortunately, only a very few mental defectives (probably between 5 and 10 per cent.) have certifiably defective parents. The rest are the product of carriers—those who, in the words of the Brock Committee recommendation, "are likely to transmit mental defect."

Genetically speaking, if we assume (for it is by no means proved) that mental defect is transmitted by means of a single recessive Mendelian character, and if we take the incidence of mental defect in the population as 1 per cent., then 18 per cent. of the population must possess this character in so-called "heterozygous" form, and be capable of transmitting defect to the next generation. Even if it were possible in each generation to prevent *all* the defectives from breeding, the incidence of mental defect would only be reduced by one-eleventh every thirty years. And this is assuming, mark you, that every defective in every generation is hunted out, certified, and persuaded to submit to sterilisation. It is obvious that the system would fall very far short of this ideal. This figure (of one-eleventh every thirty years) would undoubtedly be significantly increased if inbreeding were very frequent among defectives. There is some evidence that assortative mating does take place in regard to intelligence, but the degree is not sufficient to alter the general line of argument here. Admittedly, if it were possible (as it may be in the future) to recognise these heterozygous individuals who "are likely to transmit mental defect," the position would be much improved, although it would apparently be desirable to sterilise 18 per cent. of the population! However, as the supporters of eugenics point out, there is no

objection to this large section of the populace to have themselves sterilised if they wish. Many of them may be only too willing, having unwanted children already. But, to my mind, the fact that such a very large proportion of mental deficiency is the result of the mating of normal or only slightly sub-normal individuals constitutes a severe criticism of the value of voluntary sterilisation as a means of preventing mental defect.

If, as I said before, it should become possible to recognise and to prevent these carriers from breeding, the situation would be quite different. But, with our present slight knowledge of human genetics, voluntary sterilisation, like all other eugenic " prophylactic " measures, seems to me unlikely to prove a short cut to the control of mental defect, and it would be unwise to be unduly optimistic about its results. Even Dr. Blacker, the general secretary of the Eugenics Society, in his remarkably unbiassed book on " Voluntary Sterilisation," to which I am mainly indebted for information on the orthodox eugenic view on this subject, admits that " voluntary sterilisation would have small biological results to begin with. But, with advances in knowledge, its judicious practice might, in the course of several generations, have appreciable effects on the transmissible qualities of the race." This is, I think, putting the case in its most favourable aspect.

The influence of heredity in mental disorder is even more obscure than in mental defect. Here we are dealing not with a single entity, but with a group of diseases whose ætiology is practically unknown. Although heredity probably plays a part in the production of mental disorder, the manner and the degree of its operation are at the moment obscure. The only way, at present, to attack the problem of sterilisation in mental disorder seems to be to weigh each case on its merits, and to attempt to reach a conclusion by balancing the good qualities and good relatives against bad qualities and tainted relatives. And I do not see how much diminution in mental disorder can be expected from such an unscientific and empirical procedure.

There are other objections to voluntary sterilisation put forward, but they do not, in my opinion, carry very much weight, and can be answered fairly satisfactorily. To objectors on the score of moral and religious principles the reply is that the measure would be a voluntary one, and no one would be asked to submit to sterilisation if it were against his principles.

In the case of certain hereditary diseases and deformities which are definitely known to be transmitted by dominant or sex-linked characters there is a strong case for the application of facilities for voluntary sterilisation. Among such diseases are epiloia, Huntingdon's chorea, split-hand, Leber's hereditary optic atrophy, and pseudo-hypertrophic muscular dystrophy. A marked reduction in incidence might be expected in a short time by a eugenic attack on these diseases.

But the aims of eugenics are not going to be satisfied with the elimination of a few rare particular diseases. The object is the improvement of the race, which, it was agreed earlier on, seemed to be threatened by the failure of natural selection. I have tried to show that the eugenic measures proposed to achieve this object would not, perhaps, be so effective as at the first glance one might think. Voluntary sterilisation for mental disorder and defect, the apple of the eugenic eye, seems to me premature, in view of our present scanty knowledge of genetics. I am unable to share in the optimism which sees in it a speedy method of overcoming these evils. If applied at the present time its effects must be extremely small, and unless there is a considerable advance in genetical knowledge, I cannot foresee any appreciable diminution in the incidence of mental disorder and defect for a very long period of time. It behoves us to regard these eugenic proposals for the improvement of our race with a reasonable scepticism, which is not disturbed by the imposing list of important personages who have given them their blessing.

And even if it were possible by breeding to eliminate at will undesirable factors in the race, there are still difficulties to be faced. Might it not be, that when breeding out one such undesirable factor, another factor might be eliminated which might, in the future, prove to be of vital importance? For example, it is well known that intelligence and fertility are to some degree correlated inversely. If, in the present state of society, we breed for intelligence, fertility might be lost. And that would be the end of us, however high our degree of intelligence. And then, apart from the elimination of undesirable factors, who is to be the arbiter of the desirable traits which are to be encouraged? The usefulness of these traits must depend on the environment, and who can foresee the future environment of the human race? Presumably, considering the environmental changes which are likely to occur from time to time, it would be best to encourage the breeding of those individuals who are best adapted to meet changes in environment.

We want to breed the best possible race. And here we leave the realm of practical science and enter into philosophy. For what is the best possible race? Shall we breed for brains or for beauty, for honesty or for financial talent, for high adventure or for safety first? Which will make the world a happier place?

A Case of Lymphatic Leukæmia with Deposits in the Skin (*Leukæmia Cutis*)

By "M.R.C.S., Guy's, 1902"

FAMILY HISTORY

FATHER healthy, lived to 84. Mother suffered from frequent minor ailments, but was active, energetic, nervous and neurotic; when 76, she was suspected of having "Hodgkin's disease." She "recovered" without treatment and died eight years later of influenza after cerebral thrombosis. Two aunts died from cancer, one uncle from phthisis.

PREVIOUS MEDICAL HISTORY

Patient, a tenth child, was acutely ill after birth with broncho-pneumonia, etc.

Had many zymotic diseases, scarlet fever, measles, mumps, diphtheria, etc.; in boyhood, frequent influenzal colds and a prolonged septic inflammation of the foot.

At Guy's.—Acute septic infection of hand. Blood never positive to Wassermann test.

South African War.—Bacillary dysentery, also typhoid. Exposed to considerable strain and hardship.

India and Burma.—Malaria (tertian), also slight pleurisy; dengue; amœbic dysentery; hepatic inflammation.

Great War and Irish Rebellion.—Six and a half years of considerable nervous strain. Wounded; gassed; repeated attacks of trench fever. After the war cardiac symptoms, attributed to trench fever. Eczema; gingivitis (trench mouth); neuritis; lumbago; acute abdominal pain (? biliary colic).

Since the War.—Pyorrhœa. Repeated attacks of influenza. Lumbago. Eczema. Tonsils extirpated in 1924 after malignant streptococcal infection, but patient was, if anything, *more* liable to colds afterwards, and contracted pneumonia (with pleuritic effusion) twice.

November, 1930.—Severe shock after operation for hæmorrhoids.

HISTORY OF PRESENT ILLNESS

Health indifferent since an acute septic throat was contracted in Barcelona in July, 1930; this was followed by congestion and painful swelling of the finger tips, bleeding from gums, petechiæ, subcutaneous hæmorrhages, and later by attacks of acute weeping eczema, Herpes Zoster, other herpetic eruptions and boils.

A first blood count, in June, 1932, showed 44,000 small lymphocytes per c.mm.

Hæmoglobin and red blood corpuscles were normal.

Lymphocytes are now 122,000 per c.mm. red blood corpuscles still normal in number. Hæmoglobin 70 per cent.

Spleen is steadily enlarging, occasional subcutaneous hæmorrhages and slight giddiness.

During last two months thickening and swelling of the lobes of the ears and the side of the nose have developed.

Patient is still active, and for the most part feels well. He looks much younger than his real age, but this has been the case since boyhood.

ÆTIOLOGY

Query congenital predisposition? Aggravated by either (*a*) serious illness in infancy, (*b*) prolonged or excessive strain, (*c*) some specific infection which has altered the rhythm of blood-production in the bone marrow.

In view of the life-long susceptibility to infection and capacity for rapid recovery, the leukæmic condition is possibly of long standing. For years before any illness was suspected the patient had occasional dull pain over the spleen with slight giddiness and fits of irritability. The spleen was never enlarged after the mild attacks of malaria, which never recurred after the patient left India 25 years ago.

Polymorphonuclears, 7,000 per c.mm., are still about normal. Their functions may be impeded by the lymphocytosis.

TREATMENT

One application of deep X-rays to the splenic area was made two years ago. Patient felt very ill afterwards. At present X-rays are being tried in an effort to disperse the swellings on the face, which are believed to be due to aggregations of lymphocytes, and they are subsiding.

The patient has made arrangements by Will for a careful post-mortem, so that the condition of the bone marrow and other organs may be compared with the various symptoms he has experienced. He feels that, as an example to the public, every medical man should make a similar provision. Until careful post-mortems are carried out in every case in which the medical attendant

desires it little real progress can be made in the understanding and treatment of most of the diseases which still baffle us.

I need hardly say that any suggestions from your readers as to treatment would be welcomed. The two outstanding features in my own case appear to be the long periods, some months in duration, and long after the disease had definitely declared itself, in which I have felt full of health and vitality and almost unaware of my condition; and, the great number and variety of cutaneous infections, boils, eczema, etc., which rapidly cleared up. Lymphatic leukæmia appears to resemble a " round-celled sarcoma " of the blood. Possibly this observation has been already made. The conviction in my own case that the condition is of very long standing is very strong, as my own reactions to infections of all sorts have never been quite normal. Both the proneness to infection and the rapidity of recovery have always been remarked upon.

Obituary

EDWARD ROBERTS, M.R.C.S. Eng., L.S.A.

(Reprinted from the " Lancet ")

THE death occurred recently in a London nursing home, after operation, of Mr. Edward Roberts, for many years surgeon to the Manchester Royal Eye Hospital. He was 78 years of age. He received his medical education at Guy's Hospital, and obtained his English diplomas in 1883. In that year he obtained honours in the intermediary examination for the M.B. Lond. but did not proceed to graduation. He was appointed resident obstetric officer to Guy's Hospital, after filling which post he became house surgeon to the Royal Eye Hospital, Manchester. Here, after five years as an interne, he was elected surgeon to the hospital and also ophthalmic surgeon to the Chorlton Union Hospital. During this period he contributed articles on his subject to the Transactions of the Manchester Pathological Society and to our own columns. On retirement from Manchester he went to live at Aberllolwyn, near Aberystwyth, and became a prominent supporter of the Aberystwyth Infirmary and Cardiganshire General Hospital, of which institution he was president at the time of his death.

Correspondence

Dr. Ryle's Departure

To the Editor of the GAZETTE

SIR,—Before I take my departure from London I want to express, through your columns, to all my friends and colleagues at Guy's something of the sense of loss which I feel on leaving them and, however inadequately, something also of my gratitude to them for many kindnesses.

These kindnesses have been spread over twenty-eight years, during the last fifteen of which I have been a member of the Staff. They culminated recently in certain expressions of goodwill which I shall never forget. Last lectures and last rounds and farewell dinners are sad occasions, but they also warm the heart.

I have tried to answer personally a very large number of friendly letters from Guy's and greater Guy's. My colleagues on the active and consulting Staff have made me and my wife the proud owners of a beautiful silver tray bearing the crest of my new office and their signatures. For this, which will be one of the most treasured of all our possessions, and for all else, we renew our thanks. The interests of the Hospital and School and those who serve them will never be far from our thoughts.

Yours, etc.,

JOHN RYLE.

13, Wimpole Street,
W.1.

Car-Parking

To the Editor of the GAZETTE

SIR,—May I take advantage of your correspondence columns to report to the students concerned the conclusions arrived at by the Clubs' Union Council at their meeting held on Thursday, December 5th, on the subject of car-parking?

The discussion was initiated by a memorandum submitted by a meeting of students to the Council. Discussions with the Inspector of Police were reported, from which it was quite clear that no roads could be set aside for car-parking for a longer period than two hours. As this would not

benefit the students concerned, it was decided to take no further steps in this direction.

It was suggested, however, that there was space available behind the warehouse adjoining the College, and the Secretary was asked to interview Mr. Rupert Brooke, the Clerk to the Governors, concerning the possibility of converting this into a car park. It is hoped that by some such means it may be possible to provide some form of parking accommodation.

Yours, etc.,
A. RUSCOE CLARKE,
Hon. Secretary,
Guy's Hospital Clubs' Union.

Guy's Hospital,
S.E.1.

General Practice

To the Editor of the GAZETTE

SIR,—While thanking Dr. P. Seymour Price for his admirable lecture on General Practice, there is one error which I think he would like to see corrected, as he states that his experience of Panel practice is nil. I refer to his story of the chemist who was horrified at being asked to dispense Pot. Iod. for a Panel patient. Either things have improved out of all recognition since the war, or else Dr. Price was having his leg pulled very nicely.

May I give you the following instance. Just five years ago Dr. Ryle diagnosed one of my Panel patients as an early pernicious anæmia and advised a certain firm's preparation of liver extract to be continued indefinitely. A 16-oz. bottle costs 24s., and this has been prescribed regularly every fortnight for the last five years, thus enabling the man to keep working. Such medicines as insulin, adrenalin, coramine, vaccines, bismuth, arsenical and gold preparations are ordered daily all over the country for Panel patients without a word of demur by the Ministry of Health. The Ministry is perturbed by the constantly increasing cost of the drug services, and keeps an accurate record of the cost of each doctor's prescription for each quarter; and they drop heavily on anyone who prescribes patent medicines, or foods, recklessly, for the purpose of attracting patients. But, if prescribing is honestly done, there is no limit to what the Panel practitioner may give to his patients. Occasionally when I have ordered a particular firm's preparation of digitalis in auricular fibrillation, or a special brand of thyroid in myxœdema, I have been asked by the Ministry for an explanation, but in each case a simple declaration that, in my opinion, they were the best products to get quick and efficient results, has quite satisfied them. In sixteen years I have never been surcharged by the Ministry for anything ordered, and I imagine this is the experience of the vast bulk of G.P.'s.

Yours, etc.,
" RIVERSIDE."

To the Editor of the GAZETTE

SIR,—I have just read Dr. Seymour Price's lecture on General Practice with keen appreciation, and I think it is a pity that there are not more like it. It is clear that in one short talk only very superficial hints can be given, and I am sure that it would be a good thing if a short course of lectures on the problems of the general practitioner could be arranged at such intervals that every man could attend one such course before he blossoms out either as a locum or for himself.

In the former case he will be cutting his teeth on someone else's practice, and he can disappear before a lot of his mistakes come home to roost, but many a hard-worked practitioner would enjoy his holiday better if he thought that his locum had some idea of what to do and, more important, what not to do. By this I do not mean that one's locums or temporary assistants are apt to lack clinical ability—far from it. In many cases they fairly dazzle one with their knowledge of recent advances and the more rarefied heights of medicine, but they fall down over the important little business points of the job. For example, one of our helpers was recently discovered doing his consulting hour in an open-necked shirt and tennis shoes, and when his day-book entries were being transferred to the ledger it was found that he had either put patients' names and no addresses or addresses and no names. This caused a lot of work and some financial loss.

Once again, however, I regret to note that the giver of an otherwise excellent lecture on General Practice has no experience of National Health Insurance work, and dismisses the subject with a few remarks on what was, apparently, the unhappy state of affairs twenty years ago. Unfortunately, these remarks are calculated to give a very bad impression of the service.

The Panel is the backbone of the great majority of all practices to-day, and when the various schemes for including the dependents of insured persons and raising the income limit for insured persons (at present shelved on grounds of economy), come into force, it will overshadow all other forms of practice.

I think National Health Insurance work gets its stigma (which is rapidly lessening) from two main sources. On the one hand the fact that it causes one's consulting room to be filled with trivialities and hypochondriacs makes medical men tend to speak slightingly of all Panel patients; and

on the other, the fact that in very crowded areas certain bad and conscienceless doctors are to be found, makes patients tend to speak slightingly of all Panel doctors.

To be engaged in Insurance practice by no means implies an inferior grade of practitioner. In this town well over half the members of the honorary staffs of the two hospitals are also Panel practitioners, and if the pure specialists such as radiologists, ophthalmologists and pathologists are excluded, then sixteen out of twenty-three men are also engaged in Panel work in one form or another. A similar state of affairs holds good for vast numbers of the smaller towns of Britain.

The chemist who had such a turn when Dr. Seymour Price prescribed potassium iodide would not move a muscle to-day. There is no drug in reason which cannot be ordered in whatsoever quantities are needed. For practical purposes, the only things which are not prescribable are proprietary drugs when there is a proper B.P. equivalent (*e.g.*, medinal for sodium barbitone) and the rather "high-faluting" preparations of the type which promise yet another medical millenium with each morning's post. The insured patient gets far and away better medicinal treatment than his non-insured brother, for the latter cannot afford one quarter of the stuff the former gets.

Yours, etc.,

Hastings. G. NESBITT WOOD.

Rat-Bite Fever

To the Editor of the GAZETTE

SIR,—Dr. Clayton-Jones should not reproach himself for failing to make an early diagnosis of the interesting case of rat-bite fever reported by him; neither should it be supposed that rat-bite fever necessarily or invariably follows the bite of a rat. It may be conveyed equally well by a cat—particularly if the cat is a "good ratter," as it might well be on a farm.

It is one of those diseases which belong rather to the wider horizon of the tropical clinician than to England, although it probably occurs more frequently here than it is diagnosed. In Japan, where it is known as "Sokosha," it is fairly common.

From the clinical standpoint I should be guided in making a diagnosis, by the following :—

1. With a relapsing temperature of the "saddle-back" type, I should always think of possible infection with one or other of a group of organisms in which neosalvarsan can do no possible harm, but may, indeed, help to a diagnosis or effect a cure, viz., spirilla, spirochætes, etc. (relapsing, sandfly, rat-bite, etc., fevers).

2. The presence of a purplish, papular rash or urticaria. (Was that really a serum rash which Dr. Clayton-Jones observed?)

3. Enlargement of lymphatic glands.

4. Puffiness of the face, such as is seen in Bright.

5. Eosinophilia during the febrile period, with a leucocytosis.

It is very difficult to see the living *S. minus* in the blood of a patient, but I have seen it when using dark-ground illumination. It is best to hunt for it during the height of a paroxysm or to examine the blood of mice infected from the patient, in which it seems to be more abundant. Stained specimens will be found the most satisfactory.

Yours, etc.,

"STANLEY."

"Patho-Dental Histology"

To the Editor of the GAZETTE

SIR,—In a recent "Passim" of the *Gazette* surprise, indignation and horror was aroused in the sensitive minds of the Editors regarding a certain notice that appeared on the boards outside the Medical School Office.

This notice announced that a course was about to commence in "Patho-Dental Histology."

"What a word!" they say, and sarcastically inquire its meaning.

Surely, if the microscopical study of dental tissues in health may be referred to as Normal Dental Histology, what is the objection to the obvious antonym, namely Patho-Dental Histology, in conditions of disease?

Whilst agreeing with the Editors that the term appears unbalanced and ungainly, and could well be replaced by Morbid Dental Histology, I fail to see grounds for such a comment appearing in their columns.

Yours, etc.,

W. HUGHES.

Guy's Hospital, S.E.1.

*** Is it the antonym? Why "obvious"?—ED.

Nurses' Debating Society

THE second debate of the season was held on Tuesday evening, November 26th. The subject of debate was that "Man's invention is man's destruction." Nurses Reed and Rooks proposed the motion and Head Nurses Britton and Clegg spoke for the opposition.

The proposers of the motion concerned themselves mostly with the invention of armaments

and the devastating results brought about by their use.

The chief point for the opposition was that invention was the outlet for man's emotions, and that it was the abuse and not the use of inventions that caused the subsequent destruction.

One speaker pointed out that we all had to die some time, so it didn't really matter if man's inventions did bring about his destruction.

A great storm of protest arose when it was suggested that the practice of birth-control would ultimately lead to the destruction of mankind.

The proposers maintained that birth-control in large families with small incomes was desirable, whereupon one of the sages arose and said that when the younger members of the audience had done their Midwifery, they would find that it was not in these large and poor families that birth-control was practised.

The argument was finally brought back into the original channel and, when put to the vote, the motion was lost by 31 votes to 2.

Reviews

Great Doctors of the Nineteenth Century. By Sir WILLIAM HALE-WHITE. Published by Messrs. Edward Arnold & Co. *Price* 15*s*.

FOR some years "the Reports" have been enlivened by Sir William Hale-White's papers on the worthies of Guy's, and these researches in medical history have equalled in interest the importance of his contributions to medical science. In this book the author has enjoyed the hobby of his retirement to the full, and, taking his net into wider fields, has captured and mounted seventeen of the best specimens of nineteenth century Medicine. In these biographies, which range from Jenner to Ross, every step in the difficult yet steady progress of the profession is reviewed and all who either helped or hindered recalled. This is the antithesis of the romantic and impressionistic type of biography so popular recently; every possible fact has been studiously gathered, every detail stated, and the reader is left to make his own picture. Thus those who are uninterested in either the marble bust or presentation gold watch of Hughlings Jackson would probably be interested in his choice of literature and method of reading, though they might not agree that one who chose Jane Austen and Trollope from such a welter lacked artistic imagination.

There is enough meat to satisfy and plenty of delicious morsels to tickle the most exacting of medical palates, and the variety and range of the dishes offered more than compensates for the occasional lack of style in serving them. This book has arrived at a very happy time, as it is an excellent present which would be certain of appreciation by the wide circle of those connected in any way with Medicine.

Sport

Rugby

Guy's v. The Army

THE Army played their first representative match at Honor Oak Park on Saturday, November 30th, when Guy's were their opponents, and after an exciting game the visitors were successful by a placed goal and 3 tries (14 points) to 2 tries (6 points).

The Hospital again lacked the services of Steytler, and with Allen and Yerbury injured, Stewart and Robin returned to complete the side. On the other hand, the Army were not at full strength, as Novis, Unwin, Dean, Leyland and Kendrew were notable absentees. However, the Army fielded excellent substitutes, and the Sandhurst centres, Harrison and Denaro, who had a perfect understanding, were continually dangerous. In Howard-Jones they have a sound full-back, whilst the pack was ably led by Whitty and Pike.

For Guy's, nobody worked harder than Stanyon-Jaques, and had Stewart, his partner, been a little more reliable, there is no doubt the back division would have had many more chances. The forwards more than held their own in the set scrums, and Hopkins did well to get the ball so often.

The Army had the advantage of a slight breeze in the first half, and with the Hospital defence wavering they nearly scored at the end of five minutes, but Halamandres came across and kicked into touch. Play for a time was fairly even, each side attacking in turn, but the tackling by both teams was so deadly that passing movements were not allowed to progress very far.

However, a fine rush by the Army forwards resulted in a score when Whitty, Pike and Owen dribbled the ball to the Hospital line, and in the scramble that followed, Melville picked up and ran over for a try, which Owen converted with a fine kick.

Minor accidents to Stewart and Wright rather upset the working of the back division, and later Dick was shaken when tackling Harrison.

Near the interval McCall broke away on the left wing and punted over Halamandres' head. Although the full-back recovered, Ridsdale rushed up and just managed to secure the touch-down for an unconverted try.

With the wind in their favour Guy's pressed heavily, and a good movement between Hopkins and Davies resulted in Robin scoring a try after three minutes' play.

A little later Stanyon-Jaques sent the ball to Dick; in a flash he spreadeagled the Army defence and, after a grand run, passed to Wright, who rounded the full-back with ease, but Kark missed adding the goal points, which would have made the scores level.

Another revival by the Army threes in which Glass and Denaro were prominent was successfully concluded when Stephenson took the final pass and crossed in the corner.

Guy's made desperate efforts to get through, but chances were thrown away either through stray passes or knocks-on, and eventually the Army made the game safe when the same players broke through again and Stephenson scored his second try.

Team.—C. Halamandres; D. H. Douglas, C. G. Wright, R. C. S. Dick, R. M. de Gregory; I. McD. Stewart, K. A. Stanyon-Jaques; C. S. Darke, P. K. Hopkins, M. R. Kark, E. R. Davies, E. B. French, I. G. Robin, P. Fletcher, C. G. Sharpe.

Guy's v. Richmond

AT the Old Deer Park, Richmond, on Saturday, December 7th, Guy's did exceedingly well to run the home side to a margin of three points, the final scores being: Richmond, a placed goal and 3 tries (14 points); Guy's, a placed goal and 2 tries (11 points).

The fog was so dense in the morning that it was doubtful whether the match would be played. However, in spite of the heavy mist which hung over the ground at the time of the kick-off, it was decided to make a start and hope for the best. Although visibility was difficult, it was sufficiently clear to follow, and in the middle of the second half the fog lifted completely.

Guy's were without the assistance of their vice-captain, C. G. Wright, but they were strengthened by the return of van Steytler and R. D. Allen. On the other hand, Richmond fielded a strong side, but lacked the services of Cranmer, who was playing in the English trial.

From the kick-off the Hospital took command of the game, and were exceedingly unfortunate not to score during the first ten minutes. During this period Richmond were hard pressed, and but for the sterling work put up by their forwards, who were relentless in their tackling, their line must have been crossed on at least two occasions.

Following a touch-down, Richmond gained relief, and in a sudden breakaway by their forwards the ball went loose, and Hennell hurled himself over for a try near the posts, but, although "no charge" was sounded, Delafield missed an easy kick at goal.

A forward rush by Guy's followed, but an interception by Welch looked dangerous when he eventually sent Johnston away on the wing. Luckily, Dick came across and tackled Johnston magnificently, and forced him into touch. Both Steytler and Allen made ground with fine kicks to touch, and eventually Dick made a great opening for Douglas, but Chapman was up to catch him near the line.

A passing movement between Studd, Welch and Johnston carried play to the Hospital's 25, and, following a ten yards' scrum, Delafield managed to shake off all attempts to tackle him, and finally he grounded the ball for a try, which Whitty did well to convert. During this effort Studd damaged a leg, but was able to resume before the interval.

The second half started with another Hospital attack, which caught the Richmond defence napping. First Allen tried to find an opening and then Steytler, but on each occasion the opposing defence was sufficient to prevent any danger. However, following a scrum thirty yards out, Stanyon-Jaques worked his way to Dick, and the latter, after selling a perfect dummy, feinted to pass to his wing and then raced in behind the posts for a glorious try, which Kark converted.

Guy's continued to have the advantage, but when they were pressing hard on their opponents' line, Stanyon-Jaques was hurt and had to retire to have his ribs strapped. During his absence Richmond scored a snap try when in a breakaway by the forwards Hall dashed over for another unconverted try.

Following the return of Stanyon-Jaques, Guy's took up the offensive and, after storming the Richmond line, Fletcher crossed for Guy's and Kark only missed kicking the goal by inches.

The Hospital were now well together, and on one occasion Douglas was thrown into touch near the corner flag and soon after Dick, although over the line, was prevented from touching down by Whitty, Delafield and Style.

The chances of the Hospital winning appeared to fade away when Styles followed up a kick-ahead and registered another unconverted try, but near the end they played excellent football and even-

tually Stanyon-Jaques broke away from a scrum and crossed for a try, which Kark failed to convert from an easy position.

In the closing minutes Guy's pressed hard, but did everything but score. It was a splendid game, fought out at a hard pace from beginning to end.

Team.—C. Halamandres; D. M. Douglas, R. C. S. Dick, J. van A. Steytler, R. M. de Gregory; R. D. Allen, K. A. Stanyon-Jaques; M. R. Kark, P. K. Hopkins, P. H. Crampton, E. R. Davies, E. B. French, C. S. Darke (Capt.), P. Fletcher, R. O. Yerbury.

Hockey

CORRECTION

In the report of the match Guy's *v.* Middlesex Hospital the name of E. B. Rowe was omitted from the team, which should have read :—

"H. V. Brown; J. S. Astbury, R. G. Archer (Capt.); A. C. Greene, A. G. Richmond, C. F. Wright; G. C. Bough, E. B. Rowe, E. J. Martin, E. J. F. Hinde, F. Butterfield."

The goal-scorers were—A. G. Richmond, F. Butterfield, E. B. Rowe and E. J. Martin.

Hospital Information, etc.

Pass List

SOCIETY OF APOTHECARIES OF LONDON.
November, 1935.
Forensic Medicine.
M. A. Partridge.
Medicine.
M. A. Partridge.

UNIVERSITY OF LONDON.
THIRD (M.B., B.S.) EXAMINATION.
November, 1935.
Pass.

C. G. Baker
C. J. F. Blumenthal
M. J. Lindsey
W. N. Mann
W. L. Ogle
F. O. Potter
B. W. Smith
E. C. Zorab

GROUP I.

G. T. Balean
A. G. Edwards
G. J. Evans
J. E. Giesen
W. H. Hamilton
H. A. Leggett
F. J. Napier

GROUP II.

H. V. Brown
J. E. Elliott
J. M. McArthur
E. D. H. Williams

Papers by Guy's Men

W. R. Spurrell. The contribution of sensation to movement. *Jour. Chart. Soc. Mass. and Med. Gym.*, 1935, xxi, 158.

E. C. Warner. Favourite prescriptions: No. 12—The Pharmacopœia of Charing Cross Hospital. *Practitioner*, 1935, cxxxv, 827.

Maurice E. Shaw. The minor horrors of life: Flatulence. *West Lond. Med. Jour.*, 1935, xl, 170.

Guy's Hospital Reports, 1935, Vol. lxxxv.
Contents of July Number

Cameron (H. C.): Sir Maurice Craig, C.B.E., M.D., F.R.C.P.

White (Paul D.): Chronic constrictive pericarditis. (1) Introductory note.

Chevers (Norman): Chronic constrictive pericarditis. (2) Observations on the diseases of the orifice and valves of the aorta (1842).

Wilks (Samuel): Chronic constrictive pericarditis. (3) Adherent pericardium as a cause of cardiac disease (1871).

Campbell (Malcolm): Chronic constrictive pericarditis. (4) Biographical note on Dr. Norman Chevers.

Gibbs (A. J.): Aortic stenosis—its ætiology and morbid anatomy.

Rogerson (C. H.), Hardcastle (D. H.) and Duguid (K.): A psychological approach to the problem of asthma and the asthma-eczema-prurigo syndrome.

Strauss (E. B.): The psychogenic factor in asthma.

Hurst (Arthur F.): Ulcerative colitis.

McGregor (H. Gordon): Brittle bones with blue sclerotics in fifteen members of a family.

Mollison (W. M.): The operative treatment of vertigo.

Harding (H. E.): The effects on the rabbit of repeated large intravenous doses of glucose.

Changes of Address

C. A. Clarke, 79, St. George's Square, S.W.1. *Victoria* 0647.

H. J. B. Atkins, 22, Merrick Square, Southwark, S.E.1.

R. L. Peregrine, Kessingland, Lowestoft. *Kessingland* 3.

R. Ernest Rix, 37, Wimpole Street, W.1. *Welbeck* 1896.

Marriages

Mr. Selwyn Holms, L.D.S., has asked us to correct the announcement of the date of his marriage, which took place on July 27th, not, as we were informed, on July 7th. The notice should, therefore, read :—

HOLMS—SPOOR.—On July 27th, 1935, in London, Selwyn Holms, L.D.S., to Lucette, youngest daughter of M. and Mme. Charles Spoor, of Limoges, France.

THURSTON—BARBER.—On December 14th, 1935, Gavin Thurston, M.R.C.S., L.R.C.P., to Ione, only daughter of J. T. Barber, Esq., J.P., at St. Paul's, Winchmore Hill.

Birth

DOWNING.—On December 17th, 1935, at the Fielding-Johnson Private Hospital, Leicester, to Violet, wife of F. J. Downing, L.D.S., R.C.S.Eng., 22, Westminster Road, Leicester—a son.

Deaths

RICHMOND.—On November 22nd, 1935, at 21, Gordon Place, W.8, Theodora Richmond (née Van Riemsdyk), Hon. Librarian, Patients' Library, wife of Arthur Richmond.

LANDON.—On November 25th, 1935, at 16, Leyland Road, Lee Green, S.E.12, Ernest E. B. Landon, M.R.C.S., L.R.C.P., eldest son of the late Ernest W. Landon, of Carshalton.

EDS. { P. W. C.
M. A. P.